Apparel Design and Development

Rita Christoffersen, Program Director, 320 Home Economics Building, 715/232-1194

Introduction

The Apparel Design and Development program prepares students for careers in the apparel and fashion-related industries as team members who understand the whole of the apparel pipeline. Graduates of Stout's program hold careers in apparel product design and development, apparel product management, and apparel quality assurance.

Apparel design courses integrate consumer needs and desires with aesthetics and technology as they address societal and ethical issues. The technical courses are supported by state-of-the art laboratories. Yearly, the program has credit-producing learning experiences traveling to New York City and other apparel and fashion centers. A semester of study at the American College in London is available to program students.

The Apparel Design and Development program is one of only 13 programs of its kind in North America that has affiliation status with the American Apparel and Footwear Association.

General Requirements
Bachelor of Science Degree

Total for graduation ..... 124 credits
General Education ..... 42 credits
Major Studies ..... 61-62 credits
Concentrations ..... 15 credits
Electives ..... 5-6 credits

Students are required to take 61 or 62 business and professional core credits and select one or more of the three 15-credit concentrations:

1. Apparel Design
2. Apparel Product Management
3. Apparel Development

Course grades of "C" or higher are required in the Professional Core and the concentrations.

Program Requirements

General Education

42 credits required

A. Communication Skills **8 credits**

ENGL-101 Freshman English – Composition *or*
ENGL-111 Freshman English – Honors I 3
ENGL-102 Freshman English – Reading and Related Writing *or*
ENGL-112 Freshman English – Honors II 3
SPCOM-100 Fundamentals of Speech 2

B. Analytic Reasoning **6 credits**

Courses must be from areas including math, logic, statistics and computer science.

C. Health and Physical Education **2 credits**

Courses must be from areas of health, physical education or nutrition.

D. Humanities and the Arts **9 credits**

Courses must be from three or more areas including art history, creative arts, foreign language and culture, history, literature, music appreciation, performing arts and philosophy.

E. Social and Behavioral Sciences **9 credits**

ECON-210 Principles of Economics I (*recommended*) 3
Courses must be from three or more areas including anthropology, economics, geography, political science, psychology and sociology.

F. Natural Sciences (with Lab) **4 credits**

G. Technology **2 credits**

H. General Education Electives **2 credits**

Courses must be from categories A, B, D, E and F.

Major Studies

61-62 credits required

Professional Core

44 credits required

APRL-101 Introduction to Apparel Design and Development 3
APRL-140 Textiles 3
APRL-166 Apparel Construction 3
APRL-180 Pattern Development 3
APRL-202 Quality of Sewn Products 3
APRL-250 Textile Evaluation 3
APRL-274 Fashion Industry 3
APRL-355 Special Topics in Apparel Design and Development (*four credits required*) 1-3
APRL 370 Portfolio Development 3
APRL-375 Technical Design Development 3
APRL-381 Functional Clothing Design 3
APRL-382 Advance Pattern Development 3
APRL-394 Knit Design and Technology 3
APRL-398 Field Experience or
APRL-X49 Cooperative Education 1
APRL-474 Apparel Production 3

Business Core

17-18 credits required

BUINB-260	Introduction to International Business *or*	
BUINB-367	International Management	3
BUINB-485	International Marketing *or*	
BUMKG-330	Principles of Marketing	3
BUMKG-479	Marketing Research *or*	
PSYC-370	Interpersonal Effectiveness	2-3
BURTL-227	Basic Merchandising	3
BURTL-319	International Economic Trends in Textiles and Clothing	3
INMGT-400	Organizational Leadership	3

Concentrations

15 credits required

Apparel Design

APRL-185	Apparel Line Development	3
APRL-211	History of Fashion	3
APRL-286	CAD for Apparel	3
APRL 485	Apparel Design Studio	3
BURTL-417	Social-Psychological Aspects of Clothing	3

Apparel Development

APRL-185	Line Development	3
APRL-286	CAD for Apparel	3
BUACT-206	Introduction to Financial Accounting	3
BUMIS-333	Management Information Systems *or*	
APRL-485	Apparel Design Studio	3
ENGL-415	Technical Writing	3

Apparel Product Management

BUACT-206	Introduction to Financial Accounting	3
BUMIS-333	MIS Decision Support Systems	3
ENGL-415	Technical Writing	3
INMGT-120	Quality Concepts	3

Select one of the following courses:

BUMGT-304	Principles of Management	3
BUMKG-438	Industrial Distribution	3
ECON-480	International Economics	3
POLS-340	International Relations	3

Electives

5-6 credits required

Applied Mathematics and Computer Science

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Introduction

The role of mathematics in our highly scientific-technological society is basic and essential. Mathematical thought and modeling are valued tools in our sophisticated industrial community. The application of mathematics to industry and business to meet society's needs is increasing. This growth and demand continues to create a need for graduates with training in Applied Mathematics and Computer Science.

The program in Applied Mathematics and Computer Science provides 1. a strong foundation in academic mathematics; 2. computational concepts and techniques in computer science, statistics and mathematical models; 3. experiences in areas where mathematics, computers and/or statistics are utilized; and 4. a broad offering of liberal arts courses.

At the completion of the freshman year or after entering the Applied Mathematics and Computer Science program, all students prepare and submit a tentative plan or guide for their undergraduate program. This plan is developed through consultation with an academic adviser and the Program Director. The ultimate plan is developed to meet the student's professional objectives and goals through the appropriate selection of courses within the major studies and the desired related area in which mathematics, computers and/or statistics are used.

Off-campus work in an approved position using computer and/or statistical techniques in the analysis and solution of real world problems is a valuable option within this major. Students receive salaried appointments and course credits. This experience can be included within the program and completed during the junior or senior year. The duration of the experience is for periods of a summer or a summer plus one semester.

General Requirements Bachelor of Science Degree

Total for graduation	124 credits
General Education	43-45 credits
Major Studies	53 credits
Concentration	23-24 credits
Electives	4-5 credits

In fulfilling the necessary competencies for a degree, a student may complete the requirements for a minor in Business Administration, Economics, or Technical Writing. It is the student's responsibility to obtain approval for the minor from the department offering it.

Program Requirements

General Education

43-45 credits required

A. Communication Skills — **8 credits**

ENGL-101 Freshman English – Composition *or*
ENGL-111 Freshman English – Honors I 3
ENGL-102 Freshman English – Reading and Related Writing *or*
ENGL-112 Freshman English – Honors II 3
SPCOM-100 Fundamentals of Speech 2

B. Analytic Reasoning — **7-8 credits**

CS-144 Computer Science I 3
MATH-153 Calculus I *or*
MATH-156 Calculus and Analytic Geometry I 4-5

C. Health and Physical Education — **2 credits**

Courses must be from areas of health, physical education or nutrition.

D. Humanities and the Arts — **9 credits**

Courses must be from three or more areas including art history, creative arts, foreign language and culture, history, literature, music appreciation, performing arts and philosophy.

E. Social and Behavioral Sciences — **9 credits**

Courses must be from three or more areas including anthropology, economics, geography, political science, psychology and sociology.

*Students enrolled in the **Business Management Concentration** should take:*
ECON-210 Principles of Economics I 3
Remaining courses must be from three or more areas including anthropology, geography, political science, psychology and sociology.

F. Natural Sciences (with Lab) — **4-5 credits**

See selected concentration for course selection.

G. Technology — **2 credits**

H. General Education Electives — **2 credits**

Courses must come from categories A, B, D, E and F.

Major Studies

53 credits required

Foundational Mathematics — 25 credits

Credit distribution based on the concentration selected.

Techniques – Analysis

MATH-154 Calculus II *or*
MATH-157 Calculus and Analytic Geometry II 4-5
MATH-158 Calculus III 3
MATH-255 Differential Equations 3

Select 6-9 credits from the following:

Techniques – Algebra

MATH-275 Linear Algebra 3
MATH-370 Modern Algebra I 3

Theory of Algebra

MATH-371 Modern Algebra II 3

Select 6-9 credits from the following:

Geometric Applications

MATH-262 Modern Geometry 3

Theoretical Analysis

MATH-450 Real Analysis I 3
MATH-451 Real Analysis II 3
MATH-460 Complex Variables 3

Select 3 credits from the courses above not already taken.

Computational Mathematics — 28 credits

Mathematical Models

MSCS-490 Mathematical Models I 2
MSCS-491 Mathematical Models II 2

Statistical Methods

See concentration for appropriate course selection.

Statistical Theory

See concentration for appropriate course selection.

Computer Language

See concentration for appropriate course selection.

Computer Methods

See concentration for appropriate course selection.

Concentrations

23-24 credits required

- *Actuarial Science*
- *Business Management*
- *Software Development*

Electives

4-5 credits

Select 4-5 additional elective credits from courses listed under the major, concentration or minor to complete the degree requirements of 124 credits.

Actuarial Science Concentration

*Select the following courses to fulfill the **Computational Mathematics** requirements from Major Studies – page 28:*

Statistical Methods

STAT-320 Statistical Methods 3

Statistical Theory

Select 6 credits from the following:

STAT-331 Probability and Mathematical Statistics I 3
STAT-332 Probability and Mathematical Statistics II 3

Computer Language

Select 6 credits from the following:

CS-145 Computer Science II 3
CS-241 Assembly Language Programming 3
CS-246 Computer Programming – COBOL 3
CS-248 Web and Internet Programming 3
CS-342 Survey of Programming Languages 3

Computer Methods

Select 9 credits from the following:

CS-341 Data Structures 3
CS-343 Mathematical Foundations of Computer Graphics 3
CS-441 Computer Organization 3
CS-442 Systems Programming 3
CS-443 Database Systems Manipulation and Design 3
MSCS-446 Numerical Analysis I 3
MSCS-447 Numerical Analysis II 3
CS-448 Software Engineering 3

► ***Actuarial Science Concentration Requirements*** — ***23 credits***

ENGL-XXX *Any Writing* 3
MSCS-390 Topics: Actuarial Exam I Prep 2
MSCS-390 Topics: Actuarial Exam II Prep 2

Select 4 credits from:

XXX-XXX *Any Foreign Language* 1-4

Concentration Selectives

Select 12 credits from the following:

BUACT-206 Introduction to Financial Accounting 3
BUACT-207 Introduction – Corporate and Managerial Accounting 3
BUACT-340 Business Finance 3
BULGL-355 Principles of Risk Management 3
ECON-435 Money, Banking, Financial Markets 3
CS-346 Simulation Modeling and Analysis 3

Business Management Concentration

*Select the following courses to fulfill the **Computational Mathematics** requirements from Major Studies – page 28:*

Statistical Methods

STAT-320 Statistical Methods 3

Statistical Theory

Select 3 credits from the following:

STAT-331 Probability and Mathematical Statistics I 3
STAT-332 Probability and Mathematical Statistics II 3

Computer Language

Select 9 credits from the following:

CS-145 Computer Science II 3
CS-241 Assembly Language Programming 3
CS-246 Computer Programming – COBOL 3
CS-248 Web and Internet Programming 3
CS-342 Survey of Programming Languages 3

Computer Methods

Select 9 credits from the following:

CS-341 Data Structures 3
CS-343 Mathematical Foundations of Computer Graphics 3
CS-441 Computer Organization 3
CS-442 Systems Programming 3
CS-443 Database Systems Manipulation and Design 3
MSCS-446 Numerical Analysis I 3
MSCS-447 Numerical Analysis II 3
CS-448 Software Engineering 3
CS-346 Simulation Modeling and Analysis 3

► ***Business Management Concentration Requirements*** ***24 credits***

BUACT-206 Introduction to Financial Accounting 3
BUACT-207 Introduction – Corporate and Managerial Accounting 3
BUACT-312 Cost Accounting *or*
BUACT-335 Accounting for Management Decisions 3
BUMKG-330 Principles of Marketing 3
ECON-215 Principles of Economics II 3
ENGL-415 Technical Writing 3

Concentration Selectives

Select at least 6 credits from the following blocks:

Finance

BULGL-318 Business Law I 3
BUACT-320 Income Tax Accounting 3
BUACT-340 Business Finance 3
BULGL-355 Principles of Risk Management 3

Economics

ECON-421 Collective Bargaining and Labor Relations 2
ECON-435 Money, Banking, Financial Markets 3
ECON-470 Economic Model-Building and Forecasting 3

General

INMGT-400 Organizational Leadership 3
BULGL-318 Business Law I 3
BUMKG-479 Marketing Research 3

Additional Option

MSCS-X49 Cooperative Internship in
Applied Mathematics and Computer Science *or*
MSCS-475 Applied Mathematics Internship 6

Software Development Concentration

*Select the following courses to fulfill the **Computational Mathematics** requirements from Major Studies – page 28:*

Statistical Methods

STAT-320 Statistical Methods 3

Statistical Theory

Select 3 credits from the following:

STAT-331 Probability and Mathematical Statistics I 3
STAT-332 Probability and Mathematical Statistics II 3

Computer Language

Select 9 credits from the following:

CS-145 Computer Science II 3
CS-241 Assembly Language Programming 3
CS-246 Computer Programming – COBOL 3
CS-248 Web and Internet Programming 3
CS-342 Survey of Programming Languages 3

Computer Methods

Select 6 credits from the following:

CS-341 Data Structures 3
CS-346 Simulation Modeling and Analysis 3
CS-441 Computer Organization 3
CS-442 Systems Programming 3
CS-443 Database Systems Manipulation and Design 3
MSCS-446 Numerical Analysis I 3
MSCS-447 Numerical Analysis II 3
CS-345 Image Processing 3

Select 6 additional credits from the areas above.

► ***Software Development Concentration Requirements*** ***24 credits***

ENGL-415 Technical Writing 3
CS-343 Mathematical Foundations of Computer Graphics 3
CS-448 Software Engineering 3
MSCS-XXX Advanced Software Engineering 3

Select 6 credits from:

XXX-XXX *Any Biology, Chemistry and/or Physics* 6

Concentration Selectives

Select 6 credits from one programming application option:

Option 1

CS-246 Computer Programming – COBOL 3
CS-443 Database Systems Manipulation and Design 3
CS-342 Survey of Programming Languages 3

Option 2

MSCS-X49 Cooperative Internship in
Applied Mathematics and Computer Science *or*
MSCS-475 Applied Mathematics Internship 3

Applied Science

Introduction

The Applied Science program offers a unique educational experience for students to learn science by doing science. The program emphasizes flexibility through a broad scientific base along with experience through a chosen career emphasis. In a world of new products and processes, the program also fosters the creativity needed to contribute to new scientific advances. Our program prepares graduates for a variety of expanding careers in biotechnology, nanotechnology, health sciences, materials science and science education. The strong academic content of the Applied Science program will also prepare graduates for entry into a variety of professional (*such as medical, pharmacy, veterinary or chiropractic*) and graduate schools.

The curriculum is based on a core of chemistry, physics, biology and mathematics. Students will explore cutting edge topics in nanotechnology and biotechnology in addition to the many facets of applied science, including technical writing, data analysis, interpersonal communication and experiment design. Principles in management, marketing, manufacturing, and finance are introduced.

In addition to working with instructors from a broad range of fields, students gain significant hands-on experience through a field or cooperative education experience. This versatility offers the qualities that employers are looking for in today's college graduates — interpersonal and problem-solving skills, high energy level and good judgment.

Our graduates are able to enter a myriad of occupations and career paths after graduation. Some of our graduates have chosen to enter the work force directly by becoming scientific sales representatives or laboratory technicians. Many of our graduates have continued with their passion in science and have chosen graduates schools in fields ranging from marine microbiology to bio-nano chemistry, while other graduates have entered dental or pharmacy schools.

In addition to fulfilling the university,s basic admission requirements, Applied Science applicants must also have an ACT math score of at least 22 (*SAT math 510*) and either rank in the upper 40 percent of your high school class (*or GPA of 3.0*), or have a composite ACT score of 22. Nontraditional or transfer student admission will be based on current admission standards with guidance from the program director.

General Requirements
Bachelor of Science Degree

Total for graduation	120-126 credits
General Education	42-47 credits
Major Studies	37-41 credits
Concentration	36-44 credits

Program Requirements

General Education

42-47 credits required

A. Communication Skills — 8 credits

ENGL-101	Freshman English – Composition *or*	
ENGL-111	Freshman English – Honors I	3
ENGL-102	Freshman English – Reading and Related Writing *or*	
ENGL-112	Freshman English – Honors II	3
SPCOM-100	Fundamentals of Speech	2

B. Analytic Reasoning — 7-10 credits

MATH-153	Calculus or	
MATH-156	Calculus and Analytical Geometry I	4-5
STAT-320	Statistical Methods *or*	
MATH-154	Calculus II *or*	
MATH-157	Calculus and Analytical Geometry II	3-5

C. Health and Physical Education — 2 credits

Courses must be from areas of health, physical education or nutrition.

D. Humanities and the Arts — 9 credits

PHIL-235	General Ethics	3

Remaining courses must be from two other areas including art history, creative arts, foreign language and culture, history, literature, music appreciation, and performing arts.

E. Social and Behavioral Sciences — 9 credits

Courses must be from three or more areas including anthropology, economics, geography, political science, psychology and sociology.

F. Natural Sciences (with Lab) — 5 credits

CHEM-135	College Chemistry I	5

G. Technology — 2 credits

H. General Education Electives — 0-2 credits

Major Studies

37-41 credits required

Specific course selection is determined by concentration requirements. See your program director.

ENGL-415 Technical Writing 3
BIO-136 College Molecular Cell Biology I 5
STAT-320 Statistical Methods (if not taken as General Education) 3
APSC-311 Issues for Scientific Professionals 3
APSC-201 Applied Science Profession I 1
APSC-401 Applied Science Profession II 1

Choose the appropriate course sequence, depending on concentration:

BIO-101 Introductory Biology *and*
BIO-150 Environmental Science 6
BIO-135 Organismal Biology *and*
CHEM-136 College Chemistry II 10

Choose the appropriate Chemistry course sequence, depending on concentration:

CHEM-335 Instrumental Methods and Analysis 3
CHEM-204 Organic Chemistry II Lecture *and*
CHEM-206 Organic Chemistry II Lab 4
CHEM-331 Quantitative Analysis *or*
CHEM-412 Advanced Biochemistry 3

Choose the appropriate Physics courses, depending on concentration:

PHYS-281 University Physics I *and*
PHYS-282 University Physics II 10
PHYS-241 College Physics I *and*
PHYS-242 College Physics II 10

Choose a minor that is not Chemistry, Biology, or Physics and complete a 1-credit independent study, cooperative education experience, or field experience for the degree without a concentration; or choose one of the following concentrations:

Concentrations

36-44 Credits

Biotechnology — 44 credits

BIO-235 Molecular Cell Biology II 4
BIO-370 Biotechnology 3
BIO-400 Special Topics: Biotechnology 1-2
BIO-470 Advanced Biotechnology 5
BIO-489 Advanced Biology Experience 1
CHEM-201 Organic Chemistry I 4
CHEM-311 Biochemistry 4
STAT-320 Statistical Methods *or*
MATH-154 Calculus II or higher (*whichever was not taken as General Education*) .. 3-4
APSC-499 Independent Study *or*
APSC-X49 Cooperative Education Experience *or*
APSC-X98 Field Experience 1

Electives *(12 credits)*
Take any UW-Stout biology or chemistry course, 200-level or higher, or any UW-River Falls biotechnology course.

Materials Science — 40-42

MATH-250 Differential Equations *or*
MATH-255 Differential Equations with Linear Algebra 3
CHEM-201 Organic Chemistry I 4
CHEM-301 Physical Chemistry 3
CHEM-303 Physical Chemistry Laboratory 1
CHEM-325 Chemistry of Polymers 3
CHEM-341 Materials Science I 4
CHEM-440 Advanced Materials Laboratory 3
CHEM-470 Materials Science II 3
ELEC-281 Circuits, Devices and Logic *or*
ELEC-272 Solid State Electronics *or*
ELEC-290 Circuits and Devices ..... 3_4
MFGE-352 Polymer Processes 3
MFGT-253 Joining and Casting Processes 3
PHYS-321 Statics and Strength of Materials *or*
PHYS-325 Strength of Materials ..... 3_4
PHYS-327 Solid State Physics 3
APSC-X49 Cooperative Education *or*
APSC-X98 Field Experience 1

Nanoscience — 36

BIO-370 Biotechnology 3
CHEM-201 Organic Chemistry 4
CHEM-301 Physical Chemistry 3
CHEM-303 Physical Chemistry Laboratory 1
CHEM-341 Chemistry of Materials I 4
NANO-XXX Introduction to Nanotechnology 2
NANO-XXX Nano-Structures 3
NANO-XXX Nano-Characterization Methods 3
NANO-XXX Applications of Nanotechnology 3
APSC-X49 Cooperative Education *or*
APSC-X98 Field Experience 1

Choose 9 credits from the following courses:

CHEM-204 Organic Chemistry II 3
CHEM-325 Chemistry of Polymers 3
CHEM-440 Advanced Materials Laboratory 3
CHEM-470 Chemistry of Materials II 3
ELEC-290 Circuits and Devices 4
MFGE-352 Polymer Processes 3
MFGT-253 Joining and Casting Processes 3

Program Requirements for the Science Education Concentration

Leads to Wisconsin 601 Licensure in Broadfield Science

Total for graduation ..... 125-126 credits
General Education ..... 42 credits
Physical and Life Sciences ..... 42-43 credits
Education ..... 41 credits

Program Requirements

General Education

42 credits required

A. Communication Skills **8 credits**

ENGL-101 Freshman English Composition *or*
ENGL-111 Freshman English Honors I 3
ENGL-102 Freshman English Reading and Related Writing *or*
ENGL-112 Freshman English Honors II 3
SPCOM-100 Fundamentals of Speech 2

B. Analytic Reasoning **7 credits**

MATH-153 Calculus 4
STAT-320 Statistical Methods 3

C. Health and Physical Education **2 credits**

Courses must be from areas of health, physical education or nutrition.

D. Humanities and the Arts **9 credits**

LIT-XXX Any literature course 3
HIST-210 Modern World 3
XXX-XXX Any creative or performing arts 1-3

Remaining courses must be from any of the humanities and the arts.

E. Social and Behavioral Sciences **9 credits**

POLS-210 American Government 3
PSYC-110 General Psychology 3

Remaining courses must be from areas of anthropology, economics, geography, political science, psychology or sociology.

F. Natural Sciences (with Lab) **5 credits**

CHEM-135 College Chemistry I 5

G. Technology **2 credits**

Major Studies

83-44 credits required

Physical and Life Sciences **42-43 credits**

BIO-111 Science, Society and the Environment 4
BIO-135 Organismal Biology 5
BIO-136 Molecular Cell Biology 4
BIO-210 Concepts and Issues in Biotechnology 2
CHEM-201 Organic Chemistry I *or*
CHEM-331 Quantitative Analysis 3-4
CHEM-353 Environmental Chemistry 3
CHEM-341 Chemistry of Materials 4
PHYS-241 College Physics I 5
PHYS-242 College Physics II 5
PHYS-255 Meteorology 2
PHYS-258 Introduction to Geology 2
PHYS-151 Astronomy 3

Education **41 credits**

EDUC-303 Educational Psychology 3
EDUC-326 Foundations of Education 2
EDUC-336 Multiculturalism: Issues and Perspectives 2
EDUC-376 Cross-Cultural Experience 1
EDUC-382 Secondary Reading and Language Development 2
EDUC-415 Classroom Management 2
SPED-430 Inclusion of Students with Exceptional Needs 3
SCIED-101 Introduction to Science Education 2
SCIED-301 Science Education Methods 3
SCIED-360 Science Education Curriculum/Assessment 3
SCIED-401 Capstone: Science Education 2
SCIED-409 Student Teaching – Science Education 16

Art Education

Introduction

The Art Education program provides students with experience in liberal studies, art history, studio art and professional education. It is a Bachelor of Science degree program that prepares students for certification by the Department of Public Instruction for teaching art in elementary and secondary schools. An understanding of general studies, art history, the present status of art and the educational environment, with an inquisitive approach toward problem solving, will move students to a professional level. Experienced art and design faculty ensure current course content and serve as advisers for students. Preteaching observation, presented at the sophomore level, provides students an early involvement in elementary and secondary schools. A required mid-program review offers students an overview of their progress. Extensive library resources and the art and design department visual resource center are significant assets. Foreign study opportunities allow students variety in cultural experiences. An optional 11 credit additional concentration in Adaptive Education is available.

Students are admitted initially as Pre-Art Education majors. To be fully admitted into the Art Education major, students must:

- Complete ARTED-108 Introduction to Art Education
- Complete EDUC-326 Foundations of Education
- Have a cumulative grade point average of 2.75 at or before 40 credits have been earned
- Pass the Pre-Professional Skills Test (*PPST*)
- Pass the required teacher background check
- Receive a "C" or better in English, speech, and program requirements
- Complete the General Education Technology requirement

General Requirements
Bachelor of Science Degree

Total for graduation ..... 135 credits
General Education ..... 42 credits
Major Studies ..... 93 credits

A mid-program portfolio review and a screening for continuation in the Art Education program are required for graduation. Before student teaching, students must have a minimum overall grade point average of 2.75, successfully completed the standardized content examination required by the Wisconsin Department of Public Instruction, compiled a professional education portfolio and be fully admitted from pre-Art Education status to the Art Education program. Students present an exhibition of their work during one semester of their senior year (*not during the semester of student teaching*). Students must achieve a minimum grade of "C" (2.0) or better in each class, achieve a 2.75 grade point average in all art, art education, art history, design, and professional education courses, and successfully complete student teaching at both primary and secondary levels before graduation.

Program Requirements

General Education

42 credits required

A. Communication Skills **8 credits**

A grade of "C" or better is required in English and speech.

ENGL-101 Freshman English – Composition *or*
ENGL-111 Freshman English – Honors I 3
ENGL-102 Freshman English – Reading and Related Writing *or*
ENGL-112 Freshman English – Honors II 3
SPCOM-100 Fundamentals of Speech 2

B. Analytic Reasoning **6 credits**

MATH-XXX *Any Mathematics from the approved General Education list* ... 4

Remaining courses must be from areas including math, logic, statistics and computer science.

C. Health and Physical Education **2 credits**

Courses must be from areas of health, physical education or nutrition.

D. Humanities and the Arts **9 credits**

MEDIA-304 Elementary Photography 3
LIT-XXX *Any Literature* 3

A remaining course must be from one of the following areas: foreign language and culture, history, music appreciation or philosophy. Either HIST-210 Modern World must be taken under this category or ANTH-220 Cultural Anthropology must be taken under Category E.

E. Social and Behavioral Sciences **9 credits**

POLS-210 American Government 3
PSYC-110 General Psychology 3

A remaining course must be from one of the following areas: anthropology, economics, geography or sociology. See previous note under category D.

F. Natural Sciences (with Lab) **4 credits**

Choose a biology course, and either a chemistry or physics course.

G. Technology **2 credits**

H. General Education Electives **2 credits**

Courses must come from categories A, B, D, E and F.

Major Studies

93 credits with a grade of "C" or better in each course is required.

Art and Design Requirements — 33 credits

ART-100	Drawing I	3
ART-101	Fundamentals of Design	3
ART-145	The Practice of Art	2
ART-200	Drawing II	1-3
ART-209	Painting I	3
ART-211	Sculpture I	3
ART-213	Ceramics I	3
ART-215	Art Metal I	3
ART-217	Printmaking I	3
ART-445	Senior Seminar	1
ART-407	Aesthetics	3
DES-220	Computer Imagery	3

Studio Selective — 3 credits

Select studio course from art metals, ceramics, drawing, life drawing, painting, printmaking, sculpture, graphic, industrial, multimedia, or interior design courses. Course selected may not be from the focus area.

Advanced Studio Selectives — 6 credits

Select two additional studio courses from one area: art metal, ceramics, drawing, painting, printmaking, or sculpture.

Art History Requirements — 12 credits

ARTH-223	Survey of Art – Ancient through Medieval	3
ARTH-224	Survey of Art – Renaissance through 20th Century	3
ARTH-319	Evolution of Design	3

Select 1 additional 20th century or non-Western art history course from the following:

ARTH-336	Modern Art	3
ARTH-337	Art Since 1950	3
ARTH-228	Oriental Art	3
ARTH-XXX	*Other, approved by advisor*	3

Professional Education Requirements — 39 credits

Students must be fully admitted into the Art Education program to enroll in courses marked with an asterisk (*).

ARTED-108	Introduction to Art Education	2
ARTED-208	Preteaching Observation (*Sophomore Year*)	2
ARTED-308	Art Education Curriculum, Methods, and Assessment*	4
EDUC-303	Educational Psychology*	3
EDUC-326	Foundations of Education	2
EDUC-336	Multiculturalism: Issues and Perspectives*	2
EDUC-376	Field Experience – Cross Cultural Experience*	1
EDUC-382	Secondary Reading and Language Development*	2
EDUC-XXX	Classroom Management*	2
SPED-430	Inclusion of Students With Exceptional Needs*	3

Select one of the following options:

Option 1

ARTED-408	Student Teaching in the Elementary School – Art*	8
ARTED-409	Student Teaching in the Secondary School – Art*	8

Option 2

ARTED-XXX	Internship*	16

Art

Introduction

The Bachelor of Fine Arts in Art offers study in Studio Art or concentrations in Industrial Design, Interior Design, Graphic Design or Multimedia Design. The curriculum provides students with experiences in studio work, art history, professional studies and general studies. An understanding of liberal studies, art history, the present status of art and design, and an inquisitive attitude toward experimentation in problem-solving will move students to a professional level in studio art or in their selected concentration. Experienced art and design faculty ensure current course content and serve as advisers to the students in respective areas. A required midprogram portfolio review offers students an overview of their progress. Extensive library resources and the art and design department visual resource center are significant assets. Foreign study opportunities allow students variety in cultural experiences. Internship and cooperative education opportunities supplement educational theory and practice in a setting with working professionals. A 2.5 grade point average and a 2.0 or better in art and design department courses is required to complete this Bachelor of Fine Arts degree. Those who choose major studies in Studio Art must present an exhibition of their work during their senior year. All students who concentrate in design must present a portfolio of their work in the final semester.

General Requirements

Bachelor of Fine Arts Degree

Total for graduation	124 credits
General Education	42 credits
Major Studies	18 credits
Concentrations or Studio Art	64 credits

Program Requirements

General Education

42 credits required

A. Communication Skills — **8 credits**

ENGL-101	Freshman English – Composition *or*	
ENGL-111	Freshman English – Honors I	3
ENGL-102	Freshman English – Reading and Related Writing *or*	
ENGL-112	Freshman English – Honors II *or*	
ENGL-113	Honors Seminar I	3
SPCOM-100	Fundamentals of Speech	2

B. Analytic Reasoning — **6 credits**

Courses must be from areas including math, logic, statistics and computer science.

C. Health and Physical Education — **2 credits**

Courses must be from areas of health, physical education or nutrition.

D. Humanities and the Arts — **9 credits**

Courses must be from three or more areas including creative arts (excluding courses with ART, ARTH, or DES prefixes) foreign language and culture, history, literature, music appreciation, performing arts and philosophy.

E. Social and Behavioral Sciences — **9 credits**

Courses must be from three or more areas including anthropology, economics, geography, political science, psychology and sociology.

F. Natural Sciences (with Lab) — **4 credits**

G. Technology — **2 credits**

H. General Education Electives — **2 credits**

Courses must come from categories A, B, D, E and F.

Major Studies

18 credits required

ART-100	Drawing I	3
ART-101	Fundamentals of Design	3
ART-103	Design	3
ART-200	Drawing II	3
ARTH-223	Survey of Art - Ancient through Medieval	3
ARTH-224	Survey of Art - Renaissance through 20th Century	3

Studio Art

64 credits required

The student may complete the following sequence of courses in studio art to complete the art degree without concentration or select a concentration in graphic design, industrial design, interior design, or multimedia design.

Studio and Related Requirements *(40 credits)*

ART-145	The Practice of Art	3
ART-301	Life Drawing I	3
ART-209	Painting I	3
ART-211	Sculpture I	3
ART-213	Ceramics I	3
ART-215	Art Metal I	3
ART-217	Printmaking I	3
ART-445	Senior Seminar	1
ART-407	Aesthetics	3
ARTH-XXX	*Three additional Art History courses* (*except ARTH-222*) *One must be a modern art history.*	9
DES-220	Computer Imagery	3
MEDIA-204	Exploring Photography	3

Studio Emphasis *(15 credits)*

Choose additional advanced experiences, totaling at least 15 credits, from a single studio area. Emphases include Art Metals, Ceramics, Drawing, Painting, Printmaking, and Sculpture.

Art Studio Selectives *(9 credits)*

Six credits must be from outside the studio emphasis, and no more than six credits from DES courses.

Definitions

UW-Stout offers a degree program and a concentration that are similar in name. "Graphic Design" (*a concentration in the BFA in Art program*) and "Graphic Communications Management" (*a separate B.S. degree*) are different, and offer students a choice of two professional areas.

Graphic Design encompasses all verbal and visual information produced for commercial reproduction. The graphic designer creates, selects and organizes elements to be reproduced in both print and nonprint formats. The purpose of graphic design is visual communication in a form that is attractive and easily understood. Print materials, exhibition design, video graphics, package design, signage, and corporate identification are examples of work produced by the graphic designer.

Graphic Communications Management prepares supervisors and managers for the printing and publishing industry. Graphic communications managers work with other industry professionals to make decisions on design, estimating, materials, production planning, scheduling and quality control of all types of printed products and materials. Graphic communications managers need an understanding of the printing and publishing processes, including prepress, press and postpress systems.

Concentrations

64 credits required

Graphic Design — 64 credits

Studio and Related Requirements *(28 credits)*

ART-217	Printmaking I (*serigraphy recommended*)	3
DES-200	Design Theory and Methods	3
DES-210	Letter Form Design	3
DES-220	Computer Imagery	3
DES-205	Presentation Techniques	3
DES-310	Graphic Design I	3
DES-325	Advanced Computer Imagery	3
DES-360	Graphic Design II	3
DES-480	Senior Project – Graphic Design	4

Design Studio Selectives *(6 Credits)*

Choose one of the following:

DES-380	Signage and Exhibition Design	3
DES-410	Product and Packaging Graphics	3

and one of the following:

DES-382	Information Design	3
DES-384	Advertising Design	3
DES-386	Publication Design	3
DES-388	Typographic Design	3
XXX-XXX	*Other courses approved by program director.*	

Art Studio Selectives *(12 Credits)*

Select 6 credits from sculpture, ceramics, or art metal (3D) and 6 credits from painting, drawing, or life drawing (2D) from the following:

ART-200	Drawing II (*repeatable*)	3
ART-301	Life Drawing I	3
ART-209	Painting I	3
ART-409	Painting II	3
ART-211	Sculpture I	3
ART-411	Sculpture II	3
ART-213	Ceramics I	3
ART-413	Ceramics II	3
ART-215	Art Metal I	3
ART-415	Art Metal II	3
ART-217	Printmaking I	3
ART-417	Printmaking II	3
XXX-XXX	*Other ART/DES courses approved by program director*	1-3

Additional Art History Requirements *(6 Credits)*

ARTH-319	Evolution of Design	3
ARTH-XXX	*Any Art History* (*except ARTH-222*)	3

Technical Requirements *(11 Credits)*

GCM-141	Graphic Communications/Electronic Publishing	3
GCM-356	Color Electronic Pre-Press	3
MEDIA-204	Exploring Photography	3
XXX-XXX	*Other courses approved by adviser.*	

Elective *(1 credit)*

Industrial Design **64 credits**

Studio and Related Requirements *(34 credits)*

ART-211	Sculpture I	3
DES-200	Design Theory and Methods	3
DES-205	Presentation Techniques	3
DES-220	Computer Imagery	3
DES-310	Graphic Design I	3
DES-XXX	Product Form Design	3
DES-XXX	Body and Form Interface	3
DES-XXX	Form and Function	3
DES-XXX	Advanced Form and Function	3
DES-XXX	Professional Practice	1
DES-XXX	System and Context	3
DES-XXX	Theory and Application	3

Art Studio Selectives *(12 credits)*

ART-200	Drawing II (*repeatable*)	3
ART-301	Life Drawing I	3
ART-209	Painting I	3
ART-409	Painting II	3
ART-411	Sculpture II	3
ART-213	Ceramics I	3
ART-413	Ceramics II	3
ART-215	Art Metal I	3
ART-415	Art Metal II	3
ART-217	Printmaking I	3
ART-417	Printmaking II	3
DES-405	Advanced Presentation Techniques for Designers	3
XXX-XXX	*Other courses approved by program director*	1-3

Additional Art History Requirements *(6 credits)*

ARTH-319	Evolution of Design	3
ARTH-XXX	*Any Art History* (*except ARTH-222*)	3

Technical Requirements *(12 credits)*

MFGT-110	Materials and Manufacturing Processes	3
MFGT-202	Welding and Casting Processes *or*	
MFGT-204	Polymer Processes	3
CADD-112	Principles of Engineering Drawing	3
CADD-466	3D Computer Modeling and Rendering	3

Definitions

UW-Stout offers two concentrations that are similar in name. "Interior Design" *(B.F.A. in Art)* and "Interior Decorating" *(B.S. in Retail Merchandising and Management)* are different, and offer students a choice of two professional areas.

Interior designers produce functional and meaningful interior environments *(residential, commercial and public spaces)* by integrating human factors, art and design concepts, space planning, knowledge of architecture, building construction, codes, specifications, materials and furnishings.

The interior design concentration prepares graduates to solve interior design problems, including the initial design and remodeling of structures as part of an architectural design team or as a consultant.

Interior decorators furnish and accessorize existing or planned spaces using knowledge of color, fabrications, interior decoratives and furniture, fixtures and equipment to accommodate each client's individual taste.

The interior decorating concentration in the Retail Merchandising and Management program provides graduates with business and decorating skills to enter the marketplace in retailing, interiors studios, or their own business, including consulting.

Interior Design — 64 credits

Studio and Related Requirements *(31 credits)*

DES-200	Design Theory and Methods	3
DES-205	Presentation Techniques	3
DES-220	Computer Imagery	3
DES-303	Interior Design	3
DES-304	Interior Design II	3
DES-308	Lighting Design	3
DES-314	Interior Specifications I	3
DES-414	Interior Specifications II	3
DES-415	Environmental Interior Design I	3
DES-416	Environmental Interior Design II	4

Art Studio Selectives *(12 credits)*

ART-200	Drawing II (*repeatable*)	3
ART-301	Life Drawing I	3
ART-209	Painting I	3
ART-409	Painting II	3
ART-211	Sculpture I	3
ART-411	Sculpture II	3
ART-213	Ceramics I	3
ART-413	Ceramics II	3
ART-215	Art Metal I	3
ART-415	Art Metal II	3
ART-217	Printmaking I	3
ART-417	Printmaking II	3
DES-320	Interior Furniture Design	3
DES-405	Advanced Presentation Techniques for Designers	3
XXX-XXX	*Other ART/DES courses approved by program director*	1-3

Additional Art History Requirements *(6 credits)*

ARTH-319	Evolution of Design	3
ARTH-333	Period Furnishings	3

Technical Requirements *(14 credits)*

AEC-131	Architectural Graphics	3
AEC-171	Light Construction Methods and Materials	3
AEC-233	Architectural Design I	3
CADD-234	Computer Assisted Design and Drafting	2
APRL-140	Textiles *or*	
APRL-145	Interior Decorating/Design Textiles	3

Electives *(1 credit)*

Multimedia Design — 64 credits

Studio and Related Requirements *(25 credits)*

DES-200	Design Theory and Methods	3
DES-220	Computer Imagery	3
DES-310	Graphic Design I	3
DES-360	Graphic Design II	3
DES-325	Advanced Computer Imagery	3
DES-370	Interface Design	3
DES-372	3D Modeling and Animation	3
DES-490	Senior Project-Multimedia Design	4

Design Studio Selectives *(9 credits)*

DES-205	Presentation Techniques	3
DES-377	Interactive Digital Content Design	3
DES-383	Digital Characters	3
DES-384	Digital Environment	3
DES-385	Interactive Digital Design	3

Art Studio Selectives *(12 credits)*

ART-200	Drawing II (*repeatable*)	3
ART-301	Life Drawing I	3
ART-209	Painting I	3
ART-409	Painting II	3
ART-211	Sculpture I	3
ART-411	Sculpture II	3
ART-213	Ceramics I	3
ART-413	Ceramics II	3
ART-215	Art Metal I	3
ART-415	Art Metal II	3
ART-217	Printmaking I	3
ART-417	Printmaking II	3
XXX-XXX	*Other ART/DES courses approved by adviser.*	

Additional Art History Requirements *(6 credits)*

ARTH-319	Evolution of Design	3
ARTH-XXX	*Any Art History* (*except ARTH-222*)	3

Technical Requirements *(12 credits)*

CS-142	Computer Programming for Multimedia I	3
CS-143	Computer Programming for Multimedia II	3
MEDIA-204	Exploring Photography	2-3
MEDIA-430	Audio/Film Production Fundamentals	3

Career, Technical Education and Training

Michael Galloy, Program Director, 148 Communication Technologies Building, 715/232-2163

Introduction

This program prepares teachers for post-high school settings such as junior colleges, public and private technical colleges, and industrial training programs.

A student must obtain a minimum of 2,000 hours of appropriate work experience for provisional certification to teach vocational, technical and adult courses in Wisconsin technical colleges.

Students must make applications for admission to the education sequence. Candidates must hold a cumulative grade point average of at least 2.75.

Articulation Agreement There is an approved articulation agreement for this program with all of the Wisconsin Technical Colleges. The articulation agreement covers all Associate of Applied Art and Associate of Applied Science programs.

General Requirements

Bachelor of Science Degree

Total for graduation	124 credits
General Education	42 credits
Major Studies	75 credits
Electives	7 credits

Program Requirements

General Education

42 credits required

A. Communication Skills — **8 credits**

ENGL-101	Freshman English – Composition *or*	
ENGL-111	Freshman English – Honors I	3
ENGL-102	Freshman English – Reading and Related Writing *or*	
ENGL-112	Freshman English – Honors II	3
SPCOM-100	Fundamentals of Speech	2

B. Analytic Reasoning — **6 credits**

Courses must be from areas including math, logic, statistics and computer science.

C. Health and Physical Education — **2 credits**

Courses must be from areas of health, physical education or nutrition.

D. Humanities and the Arts — **9 credits**

Courses must be from three or more areas including art history, creative arts, foreign language and culture, history, literature, music appreciation, performing arts and philosophy.

E. Social and Behavioral Sciences — **9 credits**

PSYC-110	General Psychology	3

Remaining courses must be from three or more areas including anthropology, economics, geography, political science, psychology and sociology.

F. Natural Sciences (with Lab) — **4 credits**

G. Technology — **2 credits**

H. General Education Electives — **2 credits**

Courses must come from categories A, B, D, E and F.

Major Studies

75 credits required

Technical — **40 Credits**

Because each student brings different qualifications as a result of prior training and experience, the student, with the assistance of the program director, will define all 40 technical credits in terms of student and job competency needs.

Professional Education — **35 Credits**

MEDIA-360	Introduction to Media in Education and Training	2
INMGT-400	Organizational Leadership *or*	
PSYC-382	Human Resource Management	3
TECED-205	Teaching Methods – Technology/Vocational Education**	2
TECED-405	Curriculum Technology/Vocational Education**	2
TECED-406	Evaluation in Technology/Vocational Education**	2
TECED-408	Student Teaching – Technology/Vocational Education *or*	
TRHRD-389	Training Internship	2-8
TRHRD-360	Training Systems in Business and Industry	3
VTAE-302	Principles of Vocational, Technical and Adult Education	2
VTAE-334	Task Analysis	2
VTAE-474	Adult Education	2
SCOUN-301	Introduction to Guidance**	2
EDUC-336	Multiculturalism: Issues and Perspectives**	2
EDUC-400	Educational Psychology for the Adult Learner	2

*** Course content is mandated for Vocational, Technical and Adult Education certification.*

Electives

7 credits required

http://www.uwstout.edu/programs/bsc/

Construction

Introduction

The Construction program is designed to prepare individuals for a variety of responsible positions in the field of construction.

Broad objectives of the program include developing fundamental knowledge of science, engineering, business, management, architecture and construction principles; applying scientific, technological and management principles to the solution of construction problems; and integrating diverse scientific and technical areas as they impact on the construction field.

General Requirements
Bachelor of Science Degree

Total for graduation	129 credits
General Education	46 credits
Major Studies	74 credits
Writing and Science Preparation	6 credits
Electives	3 credits

Program Requirements

General Education

46 credits required

A. Communication Skills — 8 credits

ENGL-101	Freshman English – Composition *or*	
ENGL-111	Freshman English – Honors I	3
ENGL-102	Freshman English – Reading and Related Writing *or*	
ENGL-112	Freshman English – Honors II	3
SPCOM-100	Fundamentals of Speech	2

B. Analytic Reasoning — 6 credits

MATH-153	Calculus I	4
STAT-130	Elementary Statistics	2

C. Health and Physical Education — 2 credits

Courses must be from areas of health, physical education or nutrition.

D. Humanities and the Arts — 9 credits

Courses must be from three or more areas including art history, creative arts, foreign language and culture, history, literature, music appreciation, performing arts and philosophy.

E. Social and Behavioral Sciences — 9 credits

ECON-201	General Economics *or*	
ECON-210	Principles of Economics I	3
POLS-210	American Government	3
SOC-110	Introductory Sociology *or*	
PSYC-110	General Psychology	3

F. Natural Sciences (with Lab) — **10 credits**

PHYS-241	College Physics I *and*	
PHYS-242	College Physics II	10

G. Technology — 2 credits

Major Studies

74 credits required

Business and Management — 18 credits

INMGT-300	Engineering Economy	3
INMGT-400	Organizational Leadership	3
BUACT-201	Financial–Managerial Accounting *or*	
BUACT-206	Introduction to Financial Accounting	3
BUMGT-304	Principles of Management	3
BUMKG-330	Principles of Marketing	3
PSYC-382	Human Resource Management	3

Architecture, Engineering and Construction — 56 credits

RC-388	Construction Safety	2
BULGL-473	Legal Aspects of Construction	3
AEC-131	Architectural Graphics	3
AEC-171	Light Construction Methods and Materials	3
AEC-190	Orientation to Construction Industry	1
AEC-237	Architectural Technology	3
AEC-270	Heavy Construction Methods and Equipment	3
AEC-273	Concrete and Masonry Technology	3
AEC-357	Site Engineering	3
AEC-438	Contract Requirements and Specifications	3
AEC-452	Environmental Systems – HVAC	3
AEC-453	Environmental Systems – Plumbing and Electrical	3
AEC-458	Structural Systems – Wood and Steel	3
AEC-459	Structural Systems – Concrete and Masonry	3
AEC-370	Construction Estimating I	3
AEC-470	Construction Estimating II	2
AEC-472	Management of Construction	3
AEC-471	Project Scheduling and Cost Control	3
AEC-449	Cooperative Education Experience	2
PHYS-321	Statics and Strength of Materials	4

Writing and Science Preparation

6 credits required

ENGL-320	Business Writing *or*	
ENGL-415	Technical Writing	3
PHYS-257	Introduction to Geology and Soil Mechanics	3

Electives

3 credits required

Dietetics

Carol Seaborn, Program Director, 225 Home Economics Building, 715/232-2216

Introduction

The Dietetics program prepares graduates for careers in clinical and administrative dietetics, community and public health nutrition, corporate wellness, and nutrition education as well as for opportunities in the food services, business and industry.

The Dietetics program is currently granted approval status by the Commission on Accreditation for Dietetics Education, of the American Dietetic Association, 216 W. Jackson Blvd., Chicago, IL, 60606-6995, phone 212/299-4876. Completion of the Didactic Program in dietetics and the baccalaureate degree meet minimum academic requirements for ADA membership, registration eligibility and application to a dietetic internship or preprofessional practice program.

The dietetic student receives an education with an emphasis on the following sciences: physical and biological; behavioral and social; communication and professional. With this background, the student can move toward the community and business management of nutritional health, food service and dietetic practices.

General Requirements

Bachelor of Science Degree

Total for graduation ..... 124-125 credits
General Education ..... 45-46 credits
Major Studies ..... 71 credits
Professional Emphasis Area ..... 8 credits

Students must fulfill the English adequacy and speech proficiency requirements prescribed by the respective departments.

Supervised work experience must be obtained through participation in the Field Experience program.

Students must attain a grade point of 2.0 or better in each of the General Education and Major Studies courses. (*All transferred credits will meet this program requirement.*) A 2.75 or greater grade point average is required for graduation. A minimum grade of B (3.0) is required in FN-212 Nutrition. Courses marked with an asterisk (*) are repeatable only once, and require a cumulative grade point average of 2.50, except for FN-212, which requires a 3.0, or "B."

Program Requirements

General Education

45-46 credits required

A. Communication Skills **8 credits**

ENGL-101 Freshman English – Composition *or*
ENGL-111 Freshman English – Honors I 3
ENGL-102 Freshman English – Reading and Related Writing *or*
ENGL-112 Freshman English – Honors II 3
SPCOM-100 Fundamentals of Speech 2

B. Analytic Reasoning **6-7 credits**

STAT-130 Elementary Statistics *or*
STAT-320 Statistical Methods 2-3
MATH-120 Introductory College Mathematics I (*or more advanced*) 4

C. Health and Physical Education **2 credits**

Courses must be from areas of health, physical education or nutrition.

D. Humanities and the Arts **9 credits**

Courses must be from three or more areas including art history, creative arts, foreign language and culture, history, literature, music appreciation, performing arts and philosophy.

E. Social and Behavioral Sciences **9 credits**

POLS-210 Government 3
PSYC-110 General Psychology 3
Choose one of the following:
SOC-110 Introductory Sociology 3
SOC-225 Social Problems 3
ANTH-220 Cultural Anthropology 3
ANTH-300 Native Americans 3

F. Natural Sciences (with Lab) **9 credits**

BIO-134 Physiology and Anatomy for Health Sciences* 4
CHEM-115 General Chemistry* *or*
CHEM-125 Principles of Chemistry for Health Sciences* *or*
CHEM-135 College Chemistry I* 5

G. Technology **2 credits**

Major Studies

71 credits required

Physical and Biological Sciences		**15 Credits**
BIO-306	General Microbiology	4
BIO-362	Advanced Physiology	3
CHEM-201	Organic Chemistry	4
CHEM-311	Biochemistry	4

Nutrition and Medical Nutrition Therapy		**16 credits**
FN-212	Nutrition*	3
FN-207	Medical Terminology	1
FN-320	Advanced Nutrition	3
FN-418	Diet Therapy	4
FN-312	Nutrition Assessment	2
FN-413	Maternal and Child Nutrition *or*	
FN-415	Nutritional Issues in Gerontology	3

Nutrition Education/Counseling, Communication and Community Nutrition		**12 credits**
FN-406	Nutrition Education	3
ENGL-320	Business Writing *or*	
ENGL-415	Technical Writing *or*	
ENGL-346	Research Reporting	3
FN-360	Nutrition Counseling	3
FN-380	Community Nutrition	3

Food and Food Science		**10 credits**
FN-240	Food Science	4
FN-438	Experimental Foods	3
FN-461	Multicultural Aspects of Food and Nutrition Patterns	3

Food Service Administration/Management		**15 credits**
BUMGT-304	Principles of Management	3
HT-324	Quantity Food Production	4
HT-450	Food Service Administration	3
HT-150	Institutional Food Purchasing	2
HT-362	Food, Beverage, and Labor Cost Controls	3

Career Awareness		**3 credits**
FN-101	Dietetics as a Profession	1
FN-397	Field Experience	2

Professional Emphasis Area

8 credits required

Select 8 credits in an appropriate area of emphasis or combine credits in emphasis area, or use credits toward a minor, or choose other elective credits, all with the approval of a program director. Emphasis areas include Aging and Nutrition, Culinary Arts/Communications, Food and Nutrition, Fitness and Nutrition, Food Science and Technology, Health and Nutrition Behavior, Management of Nutrition Services, Nutrition and Rehabilitation, Nutrition Generalist, Nutrition Marketing and Public Relations, and Training/Education in Nutrition Practice.

Early Childhood Education

Judy Herr, Program Director, 119 Home Economics Building, 715/232-2486

Introduction

Curriculum in the Early Childhood Education program is designed to prepare resourceful, creative and competent graduates to work in settings with young children. The program emphasizes theory and practice and meets the requirements for birth through grade three teaching certification for the State of Wisconsin. Academic course work is enriched by involvement with children in early childhood settings early in the program, with observation and participation experiences in UW-Stout's Child and Family Study Center. Graduates are employed as preschool, kindergarten and primary teachers, and administrators of early childhood care centers, curriculum specialists, and resource and referral specialists within corporations and the public sector.

General Requirements
Bachelor of Science Degree

Total for graduation ..... 127 credits
General Education ..... 48 credits
Major Studies ..... 79 credits

Students must demonstrate proficiency in American Red Cross First Aid procedures, either by verifying current certification with their adviser, or by satisfactory completion of HLTH-340 ARC Standard First Aid and Personal Safety (*adding 1 credit to the program credit total*).

* Required courses with a grade point of 2.0 (C) or better. Courses in which a student earns less than the required 2.0 must be retaken and at least a 2.0 earned prior to student teaching.

** Required major courses with grade point of 2.67 (B-) or better. Courses in which a student earns less than the required 2.67 must be retaken and at least a 2.67 earned prior to student teaching.

Teacher Education Requirements

Students proceed through a series of three benchmarks as they move toward licensure.

Benchmark I: Acceptance into Teacher Education

Teacher education students will begin fulfilling their requirements for Benchmark I as they complete their first 40 credits.

- Complete EDUC-326 Foundations of Education
- Pass the PPST (*Pre-Professional Skills Test*)
- Attain a 2.75 cumulative grade point average
- Pass the required teacher background check
- Earn a grade of at least 2.00 (C) in ENGL- 101 and ENGL-102 or ENGL-111 and ENGL-112.
- Earn a minimum grade of 2.00 (C) in SPCOM-100 Fundamentals of Speech.
- Complete General Education Technology requirement
- Receive three recommendations to enter into teacher education

Benchmark II: Application for Student Teaching

Benchmark II must be completed prior to student teaching.

- Complete electronic portfolio
- Receive satisfactory portfolio assessment by faculty
- Pass Content Knowledge Exam
- Receive clearance through an updated background check
- Maintain a 2.75 grade point average
- Complete a satisfactory tuberculosis (*TB*) test
- Submit copies of resume to the School of Education prior to student teaching
- Complete Application for Student Teaching form

Benchmark III: Program Completion

Benchmark III must be completed before you can be recommended for licensure.

- Complete electronic portfolio and receive a basic or higher proficiency level of assessment
- Complete all program coursework
- Meet all program-specific requirements
- Student teach at three levels: infant/toddler/preschool, kindergarten and primary.
- Receive a satisfactory student teaching assessment

Program Requirements

General Education

48 credits required

A. Communication Skills — 8 credits

ENGL-101	Freshman English – Composition* *or*	
ENGL-111	Freshman English – Honors I*	3
ENGL-102	Freshman English – Reading and Related Writing* *or*	
ENGL-112	Freshman English – Honors II*	3
SPCOM-100	Fundamentals of Speech*	2

B. Analytic Reasoning — 6 credits

MATH-118	Concepts of Mathematics (*or more advanced*)*	4
STAT-130	Elementary Statistics	2

C. Health and Physical Education — 2 credits

FN-102	Nutrition for Healthy Living	2-3

D. Humanities and the Arts — 10-11 credits

LIT-300	Children's Literature*	3
HIST-120	Early U.S. History *or*	
HIST-121	Modern U.S. History	3
HIST-210	Modern World	3

Remaining courses must be from areas of creative or performing arts or art history.

E. Social and Behavioral Sciences † — 12 credits

ANTH-220	Introduction to Cultural Anthropology	3
GEOG-104	World Geography	3
POLS-210	American Government	3
PSYC-110	General Psychology *	3

F. Natural Sciences (with Lab) — 8 credits

BIO-101	Introductory Biology*	4
CHEM-105	Visualizing Chemistry *	2
PHYS-250	Introduction to Geology*	2

G. Technology — 2 credits

Major Studies

79 credits required

Early Childhood Education major studies — 44 credits

ECE-100	Introduction to Early Childhood Programs*	1
ECE-303	Developmentally Appropriate Practice: Infants and Toddlers*	3
ECE-307	Developmentally Appropriate Practice: Preschool*	4
ECE-309	Developmentally Appropriate Practice: Kindergarten-Primary*	2
ECE-364	Observing and Guiding Children: Early Childhood Classrooms**	3
ECE-410	Early Childhood Curriculum: Science*	3
ECE-411	Early Childhood Curriculum: Mathematics*	3
ECE-412	Early Childhood Curriculum: Social Studies*	3
ECE-413	Language Arts and Emergent Reading: Birth-K*	3
ECE-414	Language Arts and Emergent Reading: K and Primary*	2
ECE-421	Administration of Early Childhood Programs*	2
ECE-426	Advanced Classroom Management and Guidance**	3
ECE-435	Children, Families, Schools, and Communities**	3
FN-236	Nutrition for Young Children*	1-2
HDFS-124	Human Development: Early Childhood**	3
PE-265	Physical Activities for Young Children*	2
MUSIC-206	Music for the Young Child*	2

Student Teaching — 24 credits

ECE-480	Student Teaching: Infant, Toddler, Preschool*	8
ECE-493	Student Teaching: Kindergarten*	8
ECE-494	Student Teaching: Primary*	8

ECE-488 Intern Teaching can be taken to replace any level of student teaching.

Professional Education Core — 11 credits

EDUC-303	Educational Psychology*	3
EDUC-326	Foundations of Education*	2
EDUC-336	Multiculturalism: Issues and Perspectives*	2
EDUC-376	Field Experience – Cross Cultural Experience *	1
SPED-430	Inclusion of Students with Exceptional Needs*	3

Engineering Technology

Scott Springer, Program Director, 332 Fryklund Hall, 715/232-2162

Introduction

UW-Stout's Engineering Technology degree provides a broad background in industrial practices combined with an in-depth study in an engineering-related concentration. The program is designed to prepare graduates for industrial positions related to the engineering concentration area, with an appropriately broad background for later advancement into management positions. Typical entry-level positions include Design Engineer, Project Engineer, Plant Engineer, Process Engineer, Designer, Industrial Engineer, Production Scheduler and Applications Engineer. Students in the program develop knowledge and competencies in the concentration engineering area, materials and manufacturing methods, management/overview of the industrial organization, effective oral and written communication, and the application of physical science and mathematics principles to understand and solve technological and economic problems found in industry.

General Requirements
Bachelor of Science Degree

Total for graduation ..... 124 credits
General Education ..... 51 credits
Major Studies ..... 43 credits
Concentrations ..... 30 credits

Program Requirements

General Education

51 credits required

A. Communication Skills **8 credits**

ENGL-101 Freshman English – Composition *or*
ENGL-111 Freshman English – Honors I 3
ENGL-102 Freshman English – Reading and Related Writing *or*
ENGL-112 Freshman English – Honors II 3
SPCOM-100 Fundamentals of Speech 2

B. Analytic Reasoning **6 credits**

STAT-130 Elementary Statistics 2
MATH-153 Calculus I 4

C. Health and Physical Education **2 credits**

Courses must be from areas of health, physical education or nutrition.

D. Humanities and the Arts **9 credits**

Courses must be from three or more areas including art history, creative arts, foreign language and culture, history, literature, music appreciation, performing arts and philosophy.

E. Social and Behavioral Sciences **9 credits**

ECON-201 General Economics *or*
ECON-210 Principles of Economics I 3
Remaining courses must be from two or more areas including anthropology, geography, political science, psychology and sociology.

F. Natural Sciences (with Lab) **15 Credits**

CHEM-135 College Chemistry I 5
PHYS-241 College Physics I 5
PHYS-242 College Physics II 5

G. Technology **2 Credits**

Major Studies

43 credits required

Professional Studies **20 credits**

RD-100 Introduction to Engineering Technology 1
RC-381 Occupational Safety/Loss Control 3
INMGT-200 Production/Operations Management 3
INMGT-400 Organizational Leadership 3
INMGT-430 Employee Involvement: Work Teams 2
BUACT-200 Financial-Managerial Accounting – Engineering Technology 2
BUMKG-330 Principles of Marketing 3
ENGL-415 Technical Writing *or*
ENGL-346 Research Reporting 3

Basic Technology **23 credits**

CADD-112 Principles of Engineering Drawing I 3
ELEC-204 Electricity/Electronics Fundamentals 3
MFGT-110 Materials and Manufacturing Processes 3
MFGT-202 Welding and Casting Processes 3
MFGT-203 Machining and Metal Forming 3
MFGT-204 Polymer Processes 3
RD-205 Design for Industry 3
POWER-260 Introduction to Fluid Power 2

Concentrations

30 credits required

Students elect one of the following concentrations.

Automation Systems **30 credits**

Core Requirements *(25 credits)*

ELEC-352 Microcomputer/Microprocessor Concepts 3
ELEC-340 Motors and Generators 2
ELEC-281 Circuit Devices and Logic 3
ELEC-341 Electrical and Mechanical Interface Devices 2
ELEC-445 Automation and Control Applications 3
POWER-303 Mechanical Power Transmission 3
MFGT-303 Computer Aided Manufacturing 3
MFGT-305 Robotics 2
POWER-361 Industrial Hydraulics 2
POWER-362 industrial Pneumatics 2

Core Selectives *(5 credits)*

Select 5 credits from the following:

MFGT-310 Manufacturing Systems 3
MFGT-337 Numerical Control in Manufacturing 1-3
PKG-150 Packaging Fundamentals 2
PKG-335 Packaging Machinery 3
BUACT-410 Manufacturing Cost Analysis 3
TRHRD-360 Training Systems in Business and Industry 3
PHYS-325 Strength of Materials 3
SPCOM-XXX Advanced Speech 1-3
XXX-X49 Cooperative Education Experience 1-3

Facilities — 30 credits

Core Requirements *(24 credits)*

INMGT-300	Engineering Economics	2
INMGT-350	Facilities Planning	3
INMGT-450	Maintenance Management	2
INMGT-365	Project Management	2
AEC-237	Architectural Technology	3
AEC-438	Contract Requirements and Specifications	3
AEC-452	Environmental Systems – HVAC	3
AEC-453	Environmental Systems – Plumbing and Electrical	3
CHEM-353	Environmental Chemistry	3

Core Selectives *(6 credits)*

Select 6 credits from the following:

RC-383	Voluntary OSHA Compliance	2-3
RC-386	Fire Protection	3
INMGT-120	Quality Concepts	3
INGMT-314	Industrial Enterprise Practicum	3
BUMKG-337	Purchasing	3
AEC-357	Site Engineering	2
AEC-370	Construction Estimating I	3
CADD-234	Computer Assisted Design and Drafting	2
POWER-361	Industrial Hydraulics	2
POWER-362	Industrial Hydraulics	2
CHEM-452	Environmental Regulations Management	3
PHYS-325	Strength of Materials	3
SPCOM-XXX	Advanced Speech	1-3
XXX-X49	Cooperative Education Experience	1-3

Mechanical Design — 30 credits

Core Requirements *(24 credits)*

PHYS-321	Statics and Strength of Materials	4
CADD-113	Principles of Engineering Drawing II	3
CADD-436	Computer Assisted Design Problems	2
MECH-332	Mechanical Design	4
MECH-337	Mechanical Design Drafting	2
MECH-392	Mechanics of Machinery II	3
MECH-393	Mechanics of Machinery II	3

Choose one option:

Option 1

RD-320	Prototype Development	3

Option 2

RD-420	Research and Development	2
RD-421	Research and Development Lab	1

Core Selectives *(6 credits)*

Select 6 credits from the following:

PKG-150	Packaging Fundamentals	2
PKG-335	Packaging Machinery	3
MFGE-441	Design of Jigs and Fixtures	3
MFGT-303	Computer Aided Manufacturing	3
MFGT-310	Industrial Metrology	3
CADD-212	Descriptive Geometry	3
CADD-466	3-D Computer Modeling and Rendering	3
ELEC-348	Motors and Generators	2
POWER-303	Mechanical Power Transmission	3
POWER-361	Hydraulics	2
POWER-362	Pneumatics	2
SPCOM-XXX	Advanced Speech	1-3
XXX-X49	Cooperative Education Experience	1-3

Plastics — 30 credits

Core Requirements *(24 credits)*

MFGT-340	Plastics Processing	3
MFGT-350	Advanced Plastics Processing	3
CADD-113	Principles fo Engineering Drawing II	3
MFGT-360	Plastics Tooling I	3
MFGT-470	Plastics Tooling II	3
CHEM-325	Chemistry of Polymers	4
POWER-361	Industrial Hydraulics	2
MFGT-480	Capstone	3

Core Selectives *(6 credits)*

Select 6 credits from the following:

INMGT-120	Quality Concepts	3
PKG-150	Packaging Fundamentals	2
CADD-436	Computer Assisted Design Problems	3
PKG-200	Packaging materials	3
MFGT-303	Computer Aided Manufacturing	3
MECH-392	Mechanics of Machinery I	3
POWER-303	Computer Aided Manufacturing	3
PHYS-321	Statics and Strength of Materials	4
SPCOM-XXX	Advanced Speech	1-3
XXX-X49	Cooperative Education Experience	1-3

Production Operations — 30 credits

Core Requirements *(24 credits)*

INMGT-120	Quality Concepts	3
MFGE-XXX	Engineering Economics and Cost Analysis	3
INMGT-305	Production and Inventory Control	3
INMGT-314	Industrial Enterprise Practicum	3
INMGT-320	Quality Assurance	3
INMGT-350	Plant Layout	3
BUMKG-430	Industrial Distribution	3
BUMKG-337	Purchasing	3

Core Selectives *(6 credits)*

Select 6 credits from the following:

PKG-150	Packaging Fundamentals	2
PKG-269	Distribution Packaging	3
MFGT-308	Industrial Metrology	3
INMGT-450	Maintenance Management	3
INMGT-325	Quality Management	3
INMGT-340	Time and Motion Study	1-3
BULGL-318	Business Law	3
RC-389	Fleet Risk Control Management	2
ECON-421	Collective Bargaining and Labor Relations	2
MFGT-303	Computer Aided Manufacturing	3
BUINB-260	Introduction to International Business	3
SPCOM-XXX	Advanced Speech	1-3
XXX-XXX	*Any Co-op or Field Experience*	1-3

Family and Consumer Sciences Education

Dianne Klemme, Program Director, 144 Home Economics Building, 715/232-2546

Introduction

The Bachelor of Science degree in Family and Consumer Sciences Education prepares students to teach in elementary, middle, junior high and high school settings across the United States. The program prepares professionals who are knowledgeable regarding subject matter and content in the field of family and consumer sciences education, including life-span human development, personal and family relationships, parenting, consumer economics, food and nutrition, housing, textiles, and clothing.

Requirements of the Department of Public Instruction Benchmark I must be met before moving from pre-education status to fully admitted status in the Family and Consumer Sciences Education program:

- Complete FCSE-101 Experiential Learning
- Complete EDUC-326 Foundations of Education
- Complete 40 credits
- Pass the Pre-Professional Skills Test (*PPST*)
- Have a 2.75 grade point average
- Pass the required teacher background check
- Receive a "C" or better in English and Speech requirements
- Complete the General Education Technology requirement

General Requirements

Bachelor of Science Degree

Total for graduation ..... 126-127 credits
General Education ..... 45 credits
Professional Core ..... 40-41 credits
Professional Education ..... 41 credits

An overall cummulative grade point average of 2.75 is required for graduation.

Program Requirements

General Education

45 credits required

A. Communication Skills **8 credits**

English and Speech courses require a grade of C or better.

ENGL-101 Freshman English – Composition *or*
ENGL-111 Freshman English – Honors I 3
ENGL-102 Freshman English – Reading and Related Writing *or*
ENGL-112 Freshman English – Honors II 3
SPCOM-100 Fundamentals of Speech 2

B. Analytic Reasoning **6 credits**

MATH-XXX *Any Mathematics* 4

Remaining courses must be from areas including math, logic, statistics and computer science.

C. Health and Physical Education **2 credits**

Courses must be from areas of health, physical education or nutrition.

D. Humanities and the Arts **9 credits**

LIT-XXX *Any Literature* 1-3
HIST-210 Modern World 3
XXX-XXX *Any creative or performing arts* 1-3

Remaining courses may be from any of the humanities and the arts.

E. Social and Behavioral Sciences **9 credits**

ECON-210 Principles of Economics I *or*
ECON-201 General Economics 3
POLS-210 American Government 3
PSYC-110 General Psychology 3

F. Natural Sciences (with Lab) **9 credits**

BIO-132 Human Biology 4
CHEM-115 General Chemistry *or*
CHEM-125 Principles of Chemistry for Health Sciences 5

G. Technology **2 credits**

Professional Core

40-41 credits required

APRL-140 Textiles 3
APRL-166 Apparel Construction 3
FCSE-101 Experiential Learning 2
FCSE-201 Presentation Strategies for Family and Consumer Sciences* 2
FCSE-380 Consumer Economics 3
FCSE-385 Family Housing 3
HDFL-115 Individual and Family Relationships 3
HDFL-124 Human Development: Early Childhood 3
HDFL-215 Dynamics of Family Development 3
HDFL-313 Parent Education/Involvement 2
HDFL-365 Family Resource Management 2
FN-102 Nutrition for Healthy Living 3
FN-124 Foods 4

Select 1-2 credits from the following:

HDFL-310 Family Stress, Coping and Adaptation 1
HDFL-360 Workplace and the Family 2

Select 3 credits from the following:

FN-208 Management of Food Production 3
FN-342 Advanced Foods 3
FN-461 Multicultural Aspects of Food and Nutrition Patterns 3

Professional Education

41 credits required

Courses marked with an asterisk (*) may be taken only after meeting the requirements of Benchmark I and acceptance into Family and Consumer Sciences Education from pre-education status.

EDUC-303 Educational Psychology* 3
EDUC-326 Foundations of Education 2
EDUC-336 Multiculturalism: Issues and Perspectives* 2
EDUC-376 Field Experience – Cross Cultural Experience* 1
EDUC-382 Secondary Reading and Language Development* 2
EDUC-XXX Classroom Management* 2
FCSE-301 Family and Consumer Sciences Education Curriculum* 3
FCSE-320 Vocational Programs in FCSE* 2
FCSE-341 Clinical Experience in Schools* 1
FCSE-360 Family and Consumer Sciences Education/Family Life Evaluation* 2
FCSE-448 Student Teaching – Family and Consumer Sciences Education* 16
SPED-430 Inclusion of Students With Exceptional Needs* 3
VTAE-302 Principles of Vocational, Technical and Adult Education 2

Food Systems and Technology

Carolyn Barnhart, Program Director, 368 Home Economic Building, 715/232-2545

Introduction

The Food Systems and Technology program prepares graduates for careers in the nation's largest business-the food industry. The Food Systems and Management concentration prepares graduates to administer large quantity food production and service facilities everywhere, from cruise ships to hospitals, schools and prisons. Graduates may also manage catering operations or restaurants and delis. Entry-level positions for graduates of the Food Science concentration include assistant food scientist, quality assurance manager, food analyst, food/ingredient development team member, technical representative and government relations officer. The Food Merchandising and Distribution concentration prepares graduates for positions such as supermarket, convenience store or food discount club management; manufacturer sales; food broker; specialty food merchandising; and marketing specialist. The Food Communication concentration prepares graduates for a variety of careers including food styling, magazine or newspaper writing and editing, food and nutrition television reporter, food promotion specialist or food industry home economist. The Food Packaging concentration prepares graduates for a variety of careers in the food packaging industry including design and management as it relates and impacts the food item.

General Requirements
Bachelor of Science Degree

Total for graduation ..... 126 credits
General Education ..... 42 credits
Major Studies ..... 42 credits
Concentration ..... 42-48 credits

The student must fulfill the English adequacy and speech proficiency requirements prescribed by the respective departments.

Work experience must be obtained through participation in the Field Experience program (*after junior year*).

All transfer credits must have a grade point of 2.0 or better. A 2.25 or better grade point average is required for graduation. All major studies courses must have a 1.67 or better grade point average.

Program Requirements

General Education

42 credits required

A. Communication Skills — 8 credits

ENGL-101 Freshman English – Composition *or*
ENGL-111 Freshman English – Honors I 3
ENGL-102 Freshman English – Reading and Related Writing *or*
ENGL-112 Freshman English – Honors II 3
SPCOM-100 Fundamentals of Speech 2

B. Analytic Reasoning — 6 credits

MATH-120 Introductory College Mathematics I *or*
MATH-154 Calculus II 4

Remaining courses must be from the areas including math, logic, statistics and computer science.

C. Health and Physical Education — 2 credits

Courses must be from areas of health, physical education or nutrition.

D. Humanities and the Arts — 9 credits

Courses must be from three or more areas including art history, creative arts, foreign language and culture, history, literature, music appreciation, performing arts and philosophy.

E. Social and Behavioral Sciences — 9 credits

ECON-210 Principles of Economics I (*recommended*) 3

Courses must be from three areas including anthropology, economics, geography, political science, psychology and sociology.

F. Natural Sciences (with Lab) — 4 credits

BIO-234 Physiology and Anatomy 4

G. Technology — 2 credits

FN-222 Food Technology (*recommended*) 2

H. General Education Electives — 2 credits

Required courses from the major studies component will fulfill these requirements.

Major Studies

42 credits

BIO-306 General Microbiology 4
INMGT-400 Organizational Leadership 3
BUMKT-330 Principles of Marketing 3
EDUC-307 Applied Human Relations 2
FN-111 Food Systems and Technology Futures 1
FN-124 Foods *or*
FN-240 Food Science 4
FN-208 Management of Food Production 3
FN-212 Nutrition 2-3
FN-442 Basic Sensory Analysis 3
FN-449 Cooperative Education/Internship *or*
FN-497 Field Experience 2
FN-XXX Senior Project 1-4
PKG-150 Packaging Fundamentals 2

Select 2 credits from the following:
ENGL-415 Technical Writing *or*
SPCOM-308 Speech Skills for Business and Industry 2

Select 5 credits from the following:
CHEM-115 General Chemistry *or*
CHEM-125 Principles of Chemistry for Health Sciences *or*
CHEM-135 College Chemistry I 5

Select up to 4 credits of Major Studies Electives
XXX-XX Electives 0-4

Concentrations

43 credits required

Food Systems Management — 43 credits

BUACT-206	Introduction to Financial Accounting	3
BUACT-207	Introduction - Corporate and Managerial Accounting	3
BUMGT-304	Principles of Management	3
FN-260	Menu Planning and Design	2
FN-310	Lifespan Nutrition	3
FN-420	Food Styling	3
HT-324	Quantity Food Production	4
HT-362	Food, Beverage and Labor Cost Controls	3
HT-353	Computer Systems for Food Service	2
HT-450	Food Service Administration	3
HT-323	Food Service Equipment	2
XXX-XXX	Electives *	6

Take two of the following courses:

FN-410	Food Policy Regulation and Law	3
FN-414	Catering or	
HT-424	Catering	3
FN-461	Multicultural Aspects of Food and Nutrition Patterns	3

** BIO-206 Food Service and Environmental Sanitation (1 credit) may give students sanitation certification from the Educational Foundation of the National Restaurant Association.*

** ECON-215 Principles of Economics II and declaration on application may give students a Business Administration minor.*

Food Science — 48 Credits

INMGT-200	Production/Operations Management	3
INMGT-320	Quality Tools	3
FN-342	Advanced Foods	3
FN-350	Food Processing	3
FN-410	Food Policy Regulation and Law	3
FN-438	Experimental Foods	3
FN-450	Food Engineering	3
BIO-406	Food Microbiology	3
CHEM-201	Organic Chemistry I	4
CHEM-311	Biochemistry	4
CHEM-315	Food Chemistry	3
CHEM-335	Instrumental Methods of Analysis	3
STAT-320	Statistical Methods	3
MATH-153	Calculus I *or*	
MATH-156	Calculus and Analytic Geometry	4
PHYS-211	Introduction to Physics	3

Food Merchandising and Distribution — 44 Credits

BUACT-206	Introduction to Financial Accounting	3
BUMKG-334	Salesmanship and Sales Management *or*	
BURTL-229	Visual Merchandising	3
BUMKG-370	Principles of Advertising *or*	
BURTL-425	Current Retail Strategies for a Differential Advantage	2
BUMKG-438	Industrial Distribution	3
FN-225	Special Topics in Food and Nutrition	1-2
FN-202	Food and Beverage Distribution Industry	3
FN-470	Food Distribution Operations and Control	3
FN-410	Food Policy Regulation and Law	3
FN-420	Food Styling	3
FN-438	Experimental Foods	3
HT-324	Quantity Food Production	4
HT-450	Food Service Administration	3
HT-323	Food Service Equipment	2
PSYC-377	Consumer Psychology	3
XXX-XXX	Electives	2

Select 3 credits from the following:

BUMGT-480	Entrepreneurship: Small Business Planning *or*	
BURTL-431	Service Management Strategies *or*	
HT-362	Food, Beverage and Labor Cost Controls *or*	
ECON-215	Principles of Economics II	3

Food Communication — 42 Credits

MEDIA-304	Elementary Photography	3
GCM-141	Graphic Communications and Electronic Publishing	3
GCM-345	Publications Production	3
BUMKG-334	Salesmanship and Sales Management	3
BUMKG-370	Principles of Advertising	3
BUMKG-479	Marketing Research	3
FN-260	Menu Planning and Design	2
FN-310	Lifespan Nutrition	3
FN-325	Recipe Development and Cookbook Writing	1
FN-414	Catering *or*	
HT-424	Catering	3
FN-420	Food Styling	3
FN-438	Experimental Foods	3
FN-461	Multicultural Aspects of Food and Nutrition Patterns	3
ENGL-XXX	*Any Journalism*	2-3

Select 2-3 credits from the following:

FN-342	Advanced Foods	3
FN-410	Food Policy and Law	3
FN-XXX	*Any Food and Nutrition*	2-3

Select 2-3 credits from the following:

MEDIA-XXX	*Any Media Technology*	2-3
GCM-XXX	*Any Graphic Communications*	2-3
BUXXX-XXX	*Any Business Administration*	2-3
ART-XXX	*Any Art*	2-3
ENGL-XXX	*Any English or Journalism*	2-3

Food Packaging — 42 credits

BIO-406	Food Microbiology	3
CHEM-201	Organic Chemistry I	4
CHEM-315	Food Chemistry	3
FN-XXX	Quality Foods	3
FN-325	Food Packaging	3
FN-410	Food Policy Regulation and Law	3
FN-450	Food Engineering	3
MATH-154	Calculus II	4
PKG-XXX	Food Packaging Lab	3
PKG-200	Packaging Materials	3
PKG-250	Consumer Packaging Systems	3
PKG-335	Packaging Machinery	3
PKG-350	Packaging Design and Evaluation	2
STAT-130	Elementary Statistics	2

General Business Administration

Hugh Williamson, Program Director, 281C Jarvis Hall — Technology Wing, 715/232-2697

Introduction

The General Business Administration program at UW-Stout is unique in that it blends business with technology. It has a solid foundation of general-liberal studies and covers the functional areas of marketing, manufacturing, finance, personnel, accounting and law. It also requires comprehensive courses in policies, management information systems, leadership, and the legal and ethical aspects of management. The unique aspect of requiring credits in a technical component allows a student to tap one or more of Stout's technology areas such as construction, graphic arts management, information systems, logistics management, loss control, packaging, quality management, training, retail management, hospitality and tourism management, and the like to complement the business program.

Recent graduates have obtained positions in areas of sales, retailing, production control, manufacturing supervision, purchasing, cost accounting, human resource management, restaurant management, customer service, banking and others.

General Requirements

Bachelor of Science Degree

Total for graduation	124 credits
General Education	42 credits
Professional Preparation	8-9 credits
Major Studies	61 credits
Technical Component	10 credits
Electives	2-3 credits

A grade point average of at least 2.5 for the last 64 credits earned or a grade point average of 2.5 overall for UW-Stout credits earned in program is required.

Program Requirements

General Education

42 credits required

A. Communication Skills — 8 credits

ENGL-101	Freshman English – Composition *or*	
ENGL-111	Freshman English – Honors I	3
ENGL-102	Freshman English – Reading and Related Writing *or*	
ENGL-112	Freshman English – Honors II	3
SPCOM-100	Fundamentals of Speech	2

B. Analytic Reasoning — 6 credits

STAT-XXX	*Any Statistics*	2
MATH-123	Finite Mathematics with Applications (*or more advanced*)	4

C. Health and Physical Education — 2 credits

Courses must be from areas of health, physical education or nutrition.

D. Humanities and the Arts — 9 credits

Courses must be from three or more areas including art history, creative arts, foreign language and culture, history, literature, music appreciation, performing arts and philosophy.

E. Social and Behavioral Sciences — 9 credits

ECON-210	Principles of Economics I	3

Remaining courses must be from two or more areas including anthropology, geography, political science, psychology and sociology.

F. Natural Sciences (with Lab) — **4 credits**

G. Technology — 2 credits

H. General Education Electives — 2 credits

Courses must come from categories A, B, D, E and F.

Professional Preparation

8-9 credits

Problem Solving — 3 credits

Select one course from the following:

RD-205	Design for Industry	3
ENGL-247	Critical Writing	3
LOG-250	Critical Thinking	3
LOG-301	Introduction to Logical Thinking	3

Business Writing — 3 credits

ENGL-320	Business Writing *or*	
ENGL-415	Technical Writing	3

Information Technology — 2-3 credits

Select one course from the following:

MEDIA-440	Telecommunication Systems and Teleconferencing	2
TCS-281	Data Communications	3
TCS-305	Office Automation Technology	3
TCS-307	Artificial Intelligence Applications in Business	2
TCS-481	Telecommunications Systems Administration	3
BUMIS-310	Management Information Systems	2
XXX-XXX	*Any computer-based information systems course from a specific technical emphasis area*	1-3

Major Studies

61 credits required

At least 50 percent of these credits must be taken at UW-Stout.

Business Core		**28 credits**
INMGT-200	Production/Operations Management	3
BUMGT-100	Introduction to Business Administration	1
BUACT-206	Introduction to Financial Accounting	3
BUACT-207	Introduction – Corporate and Managerial Accounting	3
BUMKG-304	Principles of Management	3
BULGL-318	Business Law I	3
BUMKG-330	Principles of Marketing	3
BUMIS-333	Management Information Systems – Decision Support Systems	3
BUACT-340	Business Finance	3
ECON-215	Principles of Economics II	3

Professional Core		**33 Credits**
Select one course from each of the following areas:		
INMGT-XXX	*Any Production Operations*	3
BUACT-XXX	*Any Accounting*	3
BUMKG-XXX	*Any Marketing*	3
BULGL-XXX	*Any Legal*	3
BUMIS-XXX	*Any Integrated Systems*	3
BUMGT-XXX	*Any Experiential Learning*	2
XXX-XXX	*Any Human Resources*	3
BUINB-XXX	*Any International or*	
ECON-480	*International Trade*	3
XXX-XXX	*Any Management*	2-3
INMGT-XXX	*Any Practicum*	3
XXX-XXX	*Any Business Electives*	4

Technical Component

10 credits required

Select courses related to one area of technology that relates to your selected professional core. Courses may be selected from construction, graphic arts management, information systems, logistics management, loss control, packaging, quality management, training, retail management, hospitality and tourism management or others with approval of the program director.

Electives

2-3 credits required

http://www.uwstout.edu/programs/bsgcm/

Graphic Communications Management

Introduction

UW-Stout's Bachelor of Science Degree program in Graphic Communications Management prepares managers and supervisors for the printing and publishing industry. Students develop an understanding of the production process, from design through manufacturing of a product to distribution of that product. As members of a production team, graphic communication managers work with other professionals in the industry to make important decisions on design, estimating, materials, production planning, inventory, scheduling and quality control of printed products.

Through intensive hands-on laboratory environment, the program addresses skills necessary for students to succeed in the global marketplace of print media. A strong emphasis is placed on the application of theory and laboratory experience to the solution of real world problems. This program will prepare pragmatic managers of print production with the ability to respond aggressively to the needs of the marketplace; to apply research and theory to the development of marketable print media products using efficient processes; and to design with an awareness of the realities of the manufacturing process, cost, environment and needs of the customer and society.

Students involved in Graphic Communications Management are required to enroll in an industrial work experience program for six to eight months in the printing, publishing and packaging industry to gain practical experience to bridge the gap from the academic classroom and laboratories of the university to the real world of work.

Well-rounded professionals are produced by a balanced curriculum made up of the following components: general education; professional management studies; and technical skills that apply to a selected professional emphasis area.

Three student professional organizations complement the classroom and laboratory experiences encountered by Graphic Communications Management Students. The Stout Typographical Society (STS) is production-focused organization that runs a printing business and sponsors industry speakers, golf tournaments and social events, as well as an annual three-day industry field trip. The Technical Association of the Graphic Arts (TAGA) is a research oriented organization whose members research and write technical research papers that are compiled into a technical publication and entered in a competition at an international conference each spring. Graphic Communications eXchange (GCX) is a management-oriented organization that promotes leadership and professional development in its members through a wide variety of activities.

The Graphic Communications Management program is accredited by the National Association of Industry Technology (NAIT).

Definitions

UW-Stout offers a degree program and a concentration that are similar in name. "Graphic Communications Management" and "Graphic Design" (*a concentration in the BFA in Art program*) are different, and offer students a choice of two professional areas.

Graphic Communications Management prepares supervisors and managers for the printing and publishing industry. Graphic communications managers work with other industry professionals to make decisions on design, estimating, materials, production planning, scheduling and quality control of all types of printed products and materials. Graphic communications managers need an understanding of the printing and publishing processes, including prepress, press and postpress systems.

Graphic Design encompasses all verbal and visual information produced for commercial reproduction. The graphic designer creates, selects and organizes elements to be reproduced in both print and nonprint formats. The purpose of graphic design is visual communication in a form that is attractive and easily understood. Print materials, exhibition design, video graphics, package design, signage, and corporate identification are examples of work produced by the graphic designer.

General Requirements
Bachelor of Science Degree

Total for graduation	124
General Education	49
Major Studies	63
Emphasis Area	12

Program Requirements

General Education

49 credits required

A. Communication Skills **8 Credits**

ENGL-101	Freshman English – Composition	3
ENGL-102	Freshman English – Reading and Writing	3
SPCOM-100	Fundamentals of Speech	2

B. Analytic Reasoning **6-7 Credits**

STAT-130	Elementary Statistics *or*	
STAT-320	Statistical Methods	2-3
MATH-121	Introductory College Mathematics II	4

C. Health and Physical Education **2 Credits**

Courses must be from areas of health, physical education or nutrition.

D. Humanities and the Arts **9 Credits**

Courses must be from three or more areas including art history, creative arts, foreign language and culture, history, literature, music appreciation, performing arts and philosophy.

E. Social and Behavioral Sciences **9 Credits**

ECON-201	General Economics *or*	
ECON-210	Principles of Economics	3

Remaining courses must be from two additional areas including anthropology, geography, political science, psychology and sociology.

F. Natural Sciences (with Lab) **13 Credits**

BIO-111	Science, Society and Environment	4
CHEM-115	General Chemistry	5
PHYS-211	Introduction to Physics	4

G. Technology **2 Credits**

Major Studies

63 credits required

Professional Management Component **25 credits**

GCM-495	Graphic Communications Seminar	3
GCM-480	Graphic Communications Customer Service and Administration	3
GCM-X49	Cooperative Education Experience	2
INMGT-120	Quality Concepts	3
INMGT-200	Production Operations Management	3
INMGT-300	Engineering Economy	2
INMGT-400	Organizational Leadership	3
BUACT-201	Financial – Managerial Accounting	3
BUACT-206	Accounting I	3
BUMKG-330	Principles of Marketing	3

Technical Component **38 credits**

GCM-141	Graphic Communications	3
GCM-151	Prepress Tools and Processes	3
GCM-251	Digital Pre-Press File Creation	3
GCM-266	Digital and Offset Press Systems	4
GCM-270	Post-Press Operations and Planning	3
GCM-351	Digital Prepress Workflow Management	3
GCM-363	Package Printing	4
GCM-367	Reproduction Measurement and Control	3
GCM-380	Graphic Communications Estimating and Scheduling	3
GCM-443	Graphic Communications Practicum	3
GCM-445	Publication Production	3
GCM-470	Graphic Communications Distribution Management	3

Emphasis Areas **12 credits**

Choose a 12-credit emphasis area from the list provided by your advisor. Current areas include: Sales/Marketing, Packaging, Production Supervision, Production Operations, Industrial Safety/Loss, Quality, Digital Photography, Training and Development, Technical Writing, Layout and Design, or a customized emphasis approved by your advisor.

Hotel, Restaurant and Tourism Management

Darrel Van Loenen, Program Director, 405 Home Economics Building, 715/232-2543

Introduction

Hotel, restaurant and tourism management is one of the largest and fastest growing industries in the United States. Each year, leisure time increases for thousands of Americans, and the demands on the hospitality industry are growing. Existing lodging and dining facilities are expanding and new businesses are developing to accommodate the increased demand for hospitality services.

UW-Stout's Hotel, Restaurant and Tourism Management majors receive a variety of training. The program includes studies in general education to provide students a flexible background, enabling them to adapt to a wide variety of situations in today's rapidly changing society. A choice of concentrations, minors, or professional selectives provides students with flexibility to pursue a specialized field of study. The four-year curriculum is designed to prepare competent, creative and responsible managers. Graduates are employed in the hospitality food and beverage industry, hotels and tourism facilities.

General Requirements

Bachelor of Science Degree

Total for graduation ..... 124 credits
General Education ..... 42 credits
Major Studies ..... 82 credits

The student must fulfill the English adequacy and speech proficiency requirements prescribed by the respective departments. A "C-" (1.67) or better is required for each course in the major studies.

A 2.5 grade point average is required for graduation.

Program Requirements

General Education

42 credits required

A. Communication Skills **8 credits**

ENGL-101 Freshman English – Composition *or*
ENGL-111 Freshman English – Honors I 3
ENGL-102 Freshman English – Reading and Related Writing *or*
ENGL-112 Freshman English – Honors II 3
SPCOM-100 Fundamentals of Speech 2

B. Analytic Reasoning **6 credits**

STAT-130 Elementary Statistics 2
MATH-118 Concepts of Mathematics (*or more advanced*) 4

C. Health and Physical Education **2 credits**

Courses must be from areas of health, physical education or nutrition.

D. Humanities and the Arts **9 credits**

Courses must be from three or more areas including art history, creative arts, foreign language and culture, history, literature, music appreciation, performing arts and philosophy.

E. Social and Behavioral Sciences **9 credits**

ECON-210 Principles of Economics I 3
Remaining courses must be from two or more areas including anthropology, geography, political science, psychology and sociology.

F. Natural Sciences (with Lab) **4 credits**

G. Technology **2 credits**

H. General Education Electives **2 credits**

Course(s) must come from categories A, B, D, E or F.

Major Studies

82 credits required

Management — *13 credits*

HT-100	Introduction to Hospitality	1
HT-200	Hospitality Organization Management	3
HT-251	Hospitality Marketing and Sales	3
HT-XXX	Hospitality Business Strategies	3
TRHRD-360	Training Systems in Business and Industry *or*	
PSYC-382	Human Resource Management	3

Food Service Management — 12 credits

BIO-206	Food Service and Environmental Sanitation	1
FN-124	Foods	4
HT-324	Quantity Food Production	4
HT-426	Restaurant Operational Management	3

Lodging Management — 6 credits

HT-135	Lodging Systems	3
HT-335	Lodging Operations	3

Tourism — 5 credits

HT-140	Introduction to Tourism	2
HT-240	Tourism Goods and Services	3

Professional Communications — 5 credits

ENGL-320	Business Writing	3
XXX-XXX	*Any Foreign Language*	2

Financial Management — 12 credits

BUACT-206	Introduction to Financial Accounting	3
HT-361	Hospitality and Tourism Accounting	3
HT-362	Food, Beverage and Labor Cost Controls	3
HT-462	Hospitality – Financial Analysis, Budget and Forecasting	3

Computer Application Skills — 3 credits

HT-353	Computer Systems for Food Service *or*	
HT-XXX	Yield Management	3

Law — 5 credits

HT-460	Hospitality Industry Law and Liability	3
HT-461	Hospitality Industry – Employee and Labor Relations	2

Work Experience — 2 credits

Must have completed 60 credit hours before work experience can be completed.

HT-498	Field Experience or	
HT-449	Cooperative Education Experience	2

Concentration, Minor or Professional Selectives

19 credits required

Students complete the degree with a concentration, a minor, and/or professional selectives chosen in consultation with the program director.

Lodging Management — 14 credits

HT-330	Resort Planning and Operation	3
HT-351	Hospitality Convention/Meeting Planning	2
HT-383	Yield Management	3
HT-XXX	Security and Risk Management for Hospitality Industry	3

Food Service Management — 12 credits

FN-106	Nutrition in the Hospitality Industry	2
HT-150	Institutional Food Purchasing	2
HT-326	Introduction to Wines and Spirits	3
HT-353	Computers in Food Services	3
HT-424	Catering	2

Tourism Planning and Development — 9 credits

HT-340	Development of Tourism Attractions	3
HT-351	Hospitality Convention/Meeting Planning	2
HT-360	Hospitality and the Handicapped Traveler	1
HT-440	Sociocultural Systems of Tourism	3

International Hospitality Management — 18 credits

A single foreign language	6
One semester in an approved study abroad program	12

Property Management — 13 credits

BULGL-365	Principles of Real Estate	2
HT-270	Introduction to Property Management	3
HT-XXX	Commercial Property Management	3
HT-470	Seminar in Property Management	2
HT-XXX	Timeshare Administration	3

Human Development and Family Studies

Robin Muza, Program Director, 122 Home Economics Building, 715/232-1115

Introduction

The Human Development and Family Studies program is the study of human development and family life in which child, family and community are viewed as interrelated. A multidisciplinary approach provides content and theory to enhance the understanding of people and to develop creative approaches to serving them. Graduates of the program locate positions in family life education, human services and agency-related employment settings, in addition to being prepared for advanced study.

The program integrates academic study with significant experiential learning with children, families and community groups. Students are involved in observation/participation, field experience, independent study and practicum throughout the program. Hospitals, human service agencies, community groups, adolescent group homes and homes for senior citizens provide opportunities for the synthesis of practical and theoretical knowledge.

General Requirements

Bachelor of Science Degree

Total for graduation ..... 124 credits
General Education ..... 48 credits
Major Studies ..... 49 credits
Concentration or minor ..... 22 credits
Electives ..... 5 credits

Students must have a cumulative grade point average of 2.5 within the major studies for graduation and to register for the practicum experience.

Program Requirements

General Education

48 credits required

A. Communication Skills **8 credits**

ENGL-101 Freshman English – Composition *or*
ENGL-111 Freshman English – Honors I 3
ENGL-102 Freshman English – Reading and Related Writing *or*
ENGL-112 Freshman English – Honors II 3
SPCOM-100 Fundamentals of Speech 2

B. Analytic Reasoning **6 credits**

Courses must be from areas including math, logic, statistics and computer science.

C. Health and Physical Education **2 credits**

Courses must be from areas of health, physical education or nutrition.

D. Humanities and the Arts **9 credits**

Courses must be from three or more areas including art history, creative arts, foreign language and culture, history, literature, music appreciation, performing arts and philosophy.

E. Social and Behavioral Sciences **15 credits**

POLS-210 American Government 3
SOC-110 Introductory Sociology 3
PSYC-110 General Psychology 3

Remaining 6 credits can be taken from anthropology, economics, geography, political science, psychology and sociology.

F. Natural Sciences (with Lab) **4 credits**

G. Technology **2 credits**

H. General Education Electives **2 credits**

Courses must come from categories A, B, D, E and F.

Major Studies

49 credits required

HDFL-101 Introduction to Human Development and Family Studies 1
HDFL-115 Individual and Family Relations* 3
HDFL-124 Human Development: Early Childhood* 3
HDFL-215 Dynamics of Family Development* 3
HDFL-225 Skill Training for Individual/Family Interventions* 3
HDFL-264 Child Guidance* 3
HDFL-325 Human Development: Mid-Childhood/Adolescence* 3
HDFL-330 Human Development: Early/Middle Adulthood* 3
HDFL-335 Seminar – The Culturally Distinct Child and Family* 2
HDFL-336 Experience: The Culturally Distinct Child and Family 1
HDFL-340 Human Development: Late Adulthood* 3
HDFL-345 Family Health Care/Dilemmas and Decisions for Families* 2
HDFL-360 The Workplace and the Family* 2
HDFL-365 Family Resource Management* 2
HDFL-420 Family Research and Methodology* 3
HDFL-450 Family Policy* 3
HDFL-456 Abuse and the Family 3
HDFL-490 Professional Issues in Human Development and Family Studies * 2
HDFL-491 Practicum in Human Development and Family Studies* 4

** Required to become a Certified Family Life Educator by the National Council on Family Relations. Additional required courses: HDFL-313 Parent Education, FCSE-451 Family Life Education Programs.*

Concentration, Certification or Minor

22 credits required

Students complete the degree with selectives chosen in consultation with the program director, or any minor, pages 80 to 86, in consultation with the adviser.

Electives

5 credits required

Industrial Management

Wendy Dittmann, Program Director, 270 Jarvis Hall – Technology Wing, 715/232-1372

Introduction

Developed in response to place-bound professionals' need for additional education, the Bachelor of Science degree in Industrial Management is a collaborative effort between the UW Colleges, Wisconsin Technical Colleges, Dunwoody Institute in Minneapolis, and UW-Stout. The program offers evening and weekend classes using a variety of distance education methods, opportunity to build on previously completed technical education, and preparation for management and leadership challenges. Students prepare for managerial and leadership opportunities and increase salary potential in addition to growing personally and professionally in the breadth and depth of knowledge attained through previous education and experience.

An Associate of Applied Science or Associate of Science degree in a technical field is suggested. Students should possess two or more years of technical work experience; be willing to travel to receiver sites for live, interactive teleconferences/courses; and have Internet access (*through home, employer or local institution*) for Web-based instruction.

General Requirements

Bachelor of Science Degree

Total for graduation ..... 124 credits
General Education ..... 42 credits
Major Studies ..... 42 credits
Completed AAS or AS degree (*Technical Emphasis*) ..... 40 transfer credits

Program Requirements

General Education

42 credits required

A. Communication Skills **8 Credits**

ENGL-101 Freshman English – Composition *or*
ENGL-111 Freshman English – Honors I 3
ENGL-102 Freshman English – Reading and Related Writing *or*
ENGL-112 Freshman English – Honors II 3
SPCOM-100 Fundamentals of Speech 2

B. Analytic Reasoning **6 Credits**

STAT-130 Elementary Statistics 2
MATH-120 Introductory College Mathematics I (*or more advanced*) 4

C. Health and Physical Education **2 Credits**

Courses must be from areas of health, physical education or nutrition.

D. Humanities and the Arts **9 Credits**

Courses must be from three or more areas including art history, creative arts, foreign language and culture, history, literature, music appreciation, performing arts and philosophy.

E. Social and Behavioral Sciences **9 Credits**

ECON-201 General Economics *or*
ECON-210 Principles of Economics I 3
Remaining courses must be from two or more areas including anthropology, geography, political science, psychology and sociology.

F. Natural Sciences (with Lab) **4 Credits**

G. Technology **2 Credits**

H. General Education Electives **2 Credits**

Course(s) must come from categories A, B, D, E or F.

Major Studies

42 credits required

INMGT-100 Introduction to Industrial Management 1
INMGT-120 Quality Concepts 3
INMGT-200 Production/Operations Management 3
INMGT-300 Engineering Economy 2
INMGT-400 Organizational Leadership 3
BUACT-201 Financial-Managerial Accounting 3
INMGT-305 Product and Inventory Control 3
INMGT-320 Quality Tools 3
INMGT-365 Project Management 2
INMGT-370 Issues Seminar 2
INMGT-460 Industrial Management 2
RC-381 Occupational Safety/Loss Control 3
BUMGT-116 Fundamentals of Business 3
TRHRD-360 Training Systems in Business and Industry 3
ENGL-415 Technical Writing *or*
ENGL-346 Research Report Writing 3

Selective *(3 credits required)*
Choose from a list of selectives suggested by program director. If student has no professional/technical experience, INMGT-449 Cooperative Education Experience is required.

http://www.uwstout.edu/programs/bsitm/

Information Technology Management

Introduction

The Information Technology Management program prepares graduates for leadership positions in a dynamic environment. Professionals in the field deal with a broad range of business and technical issues. The program emphasizes managerial, technical and science skill courses. The field of information technology requires application of scientific, business and technical principles together with appropriate knowledge, and supports research, marketing, design, and systems that integrate information technology.

Students apply theory to solve real-world problems in an intensive hands-on laboratory environment that is the heart of UW-Stout's teaching strategy. Emphasis is on areas of information technologies that include voice, data, and video systems.

Technical courses foster the development of understanding in systems creation, design, development, implementation, operations and management. Students take courses that provide the basic knowledge about the technical elements required in building any voice, data, and video network systems. Students completing this program have the opportunity to earn one or more of the following highly respected professional certifications: Cisco CCNA, CCDA, CCNP, CCDP, and Microsoft MCSE.

Professional studies provide a solid managerial background while humanities and social science courses introduce students to methods of communications, motivation, and supervising people. Math and physical science courses help in solving technical and economic problems found in business.

Several work experience programs have been developed. Internships, field experience, independent study and cooperative education opportunities are available. You can work for a summer or semester earning college credit as well as a salary, while gaining a personal perspective of the business and technical world of information technologies.

Information Technology Management program graduates advance into administrative and executive areas within an organization. The professional certifications earned give students a substantial competitive advantage when entering the job market.

General Requirements
Bachelor of Science Degree

Total for graduation	120
General Education	41
Major Studies	79

Program Requirements

General Education

41 credits required

A. Communication Skills		8 Credits
ENGL-101	Freshman English — Composition *or*	
ENGL-111	Freshman English — Honors I	3
ENGL-102	Freshman English — Reading and Related Writing *or*	
ENGL-112	Freshman English — Honors II	3
SPCOM-100	Fundamentals of Speech	2

B. Analytic Reasoning		7 Credits
CS-144	Computer Science I	3
MATH-153	Calculus I	4

C. Health and Physical Education — 2 Credits

Courses must be from areas of health, physical education or nutrition.

D. Humanities and the Arts — 9 Credits

Courses must be from three or more areas including art history, creative arts, history, literature, music appreciation, performing arts and philosophy.

E. Social and Behavioral Sciences		9 Credits
ECON-210	Principles of Economics I	3

Courses must be from two additional areas including anthropology, geography, political science, psychology and sociology.

F. Natural Sciences (with Lab)		4 Credits
PHYS-211	Introduction to Physics	3
PHYS-212	Introduction to Physics – Lab	1

G. Technology — 2 Credits

Major Studies

79 credits required

Management		23 credits
BUACT-206	Introduction to Financial Accounting	3
BUMGT-304	Principles of Management	3
INMGT-120	Quality Concepts	3
INMGT-365	Project Management	2
INMGT-400	Organizational Leadership	3
TCS-401	Telecommunication Policy and Regulations	3
TCS-481	Telecommunication Systems Administration	3
TRHRD-360	Training Systems in Business and Industry	3

Technical		44 credits
CS-145	Computer Science II	3
CS-244	Data Structures	4
ELEC-204	Electronic Fundamentals	3
ELEC-271	Digital Logic and Switching	3
TCS-131	NOS Fundamentals	2
TCS-145	Networking Fundamentals	4
TCS-306	Introduction to Telephony	2
TCS-382	Network Systems Design	3
TCS-383	Introduction to Network Security	3
TCS-441	Scalable Internetworks	3
TCS-442	Remote Access Networks	3
TCS-443	Multi-Layer Switched Networks	3
TCS-444	Internetwork Troubleshooting	3
TCS-491	Wireless Systems	3

Electives — 12 credits

Electives may be chosen from any courses with the following prefixes: BUACT, BUINB, BULGL, BUMGT, BUMIS, BUMKG, BURTL, CS, ELEC, INMGT, SRVM, TCS, TRHRD, plus ENGL-415, RC-381, STAT-320. TCS-499 Cooperative Education Experience is recommended. Suggested minors (may require additional credits beyond program minimum) include Business Administration or Computer Science.

Marketing and Business Education

Urs Haltinner, Program Director, 132 Communication Technologies Building, 715/232-1493

Introduction

The field of marketing and business requires training for owners, managers and employees engaged primarily in marketing goods and services. Marketing and Business Education at UW-Stout provides the teachers to train the work force.

The disciplines of marketing and business contribute significantly to the intellectual and career development in an age of innovation and invention. Teachers graduating with this major are prepared to teach marketing and business education at the secondary and/or post-secondary levels. Many graduates enter positions in business and industry.

Students are certified for Marketing Education with 124 degree credits. Certification in both Marketing and Business Education is earned with 19 credits of additional courses and student teaching experience.

General Requirements Bachelor of Science Degree

Total for graduation ..... 124 - 143 credits
General Education ..... 42 credits
Major Studies ..... 82 - 101 credits

Although it is not a requirement for graduation, students should be aware of the fact that they must acquire a minimum of 4,000 hours of occupational experience before they can be certified to teach marketing education in Wisconsin and Minnesota.

Students must fulfill the English adequacy and speech proficiency requirements. Students enter the program with "pre-education" status. Earning a 2.75 or better grade point average and passing the Preprofessional Skills Test will formally move them into the Marketing Education program.

Participation in Collegiate DECA is required.

Note: Students are required to maintain a 2.75 grade point average throughout the marketing education program.

Program Requirements

General Education

42 credits required

A. Communication Skills* — 8 credits

ENGL-101 Freshman English – Composition *or*
ENGL-111 Freshman English – Honors I 3
ENGL-102 Freshman English – Reading and Related Writing *or*
ENGL-112 Freshman English – Honors II 3
SPCOM-100 Fundamentals of Speech 2

** Grade point of 2.0 (C) or better is required in each course prior to student teaching.*

B. Analytic Reasoning — 6 credits

MATH-XXX *Any Mathematics* 4

Remaining courses must be from areas including math, logic, statistics and computer science.

C. Health and Physical Education — 2 credits

Courses must be from areas of health, physical education or nutrition.

D. Humanities and the Arts — 9 credits

LIT-XXX *Any Literature* 3
HIST-210 Modern World 3

Remaining courses must be from areas including art history, creative arts, foreign language and culture, history, literature, music appreciation, performing arts and philosophy.

E. Social and Behavioral Sciences ** — 9 credits

ECON-210 Principles of Economics I 3
POLS-210 Government 3
PSYC-110 General Psychology 3

F. Natural Sciences (with Lab) **— 4 credits**

Choose a biology course, and either a chemistry or physics course.

G. Technology — 2 credits

TCS-103 Communications and Information Technology (*recommended*) 3

H. General Education Electives ** — 2 credits

Courses must come from categories A, B, D, E and F.

*** If students take ECON-215 Principles of Economics II as an elective, they meet the requirements for a Business Administration minor. ECON-215 is required for the Business Education certification.*

Major Studies

82 - 101 credits required

BUACT-206	Introduction to Financial Accounting	3
BUACT-207	Introduction – Corporate and Managerial Accounting	3
BUINB-260	International Business *or*	
BUINB-485	International Marketing	3
BULGL-318	Business Law I	3
BUMGT-304	Principles of Management	3
BUMIS-333	Management Information Systems	3
BUMKT-330	Principles of Marketing	3
BUMKT-334	Salesmanship and Sales Management	3
BUMKT-370	Principles of Advertising	3
BUMKG-479	Marketing Research	3
CTE-302	Principles of Vocational, Technical and Adult Education	2
CTE-360	Cooperative Occupational Education Programs	2
ECON-215	Economics II **	3
EDUC-303	Educational Psychology	3
EDUC-326	Foundations of Education	2
EDUC-336	Multiculturalism: Issues and Perspectives	2
EDUC-376	Field Experience — Cross Cultural Experience	1
EDUC-382	Secondary Reading and Language Development	2
INMGT-400	Organizational Leadership	3
MEBE-101	Introduction to Marketing Education	3
MEBE-202	Supervision of Business and Marketing Education Student Organizations	3
MEBE-301	Marketing Education Methods	3-4
MEBE-311	Marketing Education Project Method	2
MEBE-312	Pre-Clinical Experience: Marketing Education	1
MEBE-401	Marketing Education Curriculum	2-3
MEBE-409	Marketing Education _ Student Teaching *	8-16
MEBE-355	Marketing and Business Education Seminar	3
MEBE-411	Business Education Methods and Curriculum	5
MEBE-419	Business Education Student Teaching *	8
MEDIA-365	Integrated Software for Instruction	3
MEDIA-366	Integrated Media Applications for Instruction	3
SPED-430	Inclusion of Students With Exceptional Needs	3
TCS-305	Office Automation Technology	3

** 16 credits of MEBE-409 are required if student opts for Marketing Education certification only. For Marketing and Business Education certification, students take 8 credits of both Business Education and Marketing Education student teaching.*

*** ECON-215 Economics II results in a Business Education minor.*

Packaging

Ken Neuburg, Program Director, 281F Jarvis Hall – Technology Wing, 715/232-1246

Introduction

A packaging career today requires a thorough knowledge of materials, methods, design concepts, and machinery to develop and produce the packages that protect and preserve a product, help market the product and instruct the consumer in its proper use. UW-Stout's Bachelor of Science degree program in Packaging prepares students for technical or management responsibilities in the packaging industry to meet these needs. The program places strong emphasis on the application of theory to strengthen problem solving abilities and challenges students by providing opportunities to solution "real" packaging industry problems in classroom/laboratory settings.

The trend in the packaging industry is to hire employees who can function in more than one area at career entry. UW-Stout's Packaging program recognizes this trend by offering the student several "emphasis" options which include course and laboratory work beyond the technical core of the program. This distinguishing feature allows students to draw on other well-recognized programs offered at UW-Stout: graphic arts, graphic design, food science, business and sales, quality and manufacturing, and packaging research and development.

With the quantity and variety of products produced in the world, it is easy to understand that packaging is a dynamic multibillion dollar industry in need of well educated men and women. UW-Stout's Packaging graduates are positioned advantageously for entry into the expanding and evolving packaging industry, as well as for further studies in the field of packaging.

General Requirements
Bachelor of Science Degree

Total for graduation 124
General Education 54
Major Studies 55
Emphasis 15-16

Program Requirements

General Education

54 credits required

A. Communication Skills **10 credits**

ENGL-101 Freshman English – Composition *or*
ENGL-111 Freshman English – Honors I 3
ENGL-102 Freshman English – Reading and Related Writing *or*
ENGL-112 Freshman English – Honors II 3
SPCOM-100 Fundamentals of Speech 2
From the approved list of General Education courses, select:
SPCOM-XXX *Any advanced speech or*
XXX-XXX *Any foreign language* 2

B. Analytic Reasoning **6 credits**

STAT-130 Elementary Statistics 2
MATH-153 Calculus I 4

C. Health and Physical Education **2 credits**

Courses must be from areas of health, physical education or nutrition.

D. Humanities and the Arts **9 credits**

Courses must be from three or more areas including art history, creative arts, foreign language and culture, history, literature, music appreciation, performing arts and philosophy.

E. Social and Behavioral Sciences **9 credits**

ECON-201 General Economics *or*
ECON-210 Principles of Economics I 3
Remaining courses must be from at least two other areas including anthropology, geography, political science, psychology and sociology.

F. Natural Sciences (with Lab) **16 credits**

CHEM-115 General Chemistry *or*
CHEM-125 Principles of Chemistry for Health Sciences *or*
CHEM-135 College Chemistry I 5
Select one Physics sequence:
PHYS-231 General Physics I *and*
PHYS-232 General Physics II 8
PHYS-241 College Physics I *and*
PHYS-242 College Physics II 10
PHYS-281 University Physics I *and*
PHYS-282 University Physics II 10
Select 3 credits from:
BIO-XXX *Any approved General Education Biology elective* 3

G. Technology **2 credits**

Major Studies

55 credits required

GCM-141 Graphic Communications and Electronic Publishing *or*
ELEC -204 Electricity/Electronics Fundamentals 3
INMGT-120 Quality Concepts 3
INMGT-200 Production/Operations Management 3
INMGT-300 Engineering Economy 2-3
INMGT-400 Organizational Leadership 3
MFGT-110 Materials and Manufacturing Processes I 3
PKG-150 Packaging Fundamentals 2
PKG-200 Packaging Materials 3
MFGT-340 Plastics Processing 3
PKG-250 Consumer Packaging Systems 3
PKG-260 Distribution Packaging 3
PKG-335 Packaging Machinery 3
PKG-350 Packaging Design and Evaluation 3
PKG-490 Packaging Development 3
PKG-495 Packaging Seminar 2
CADD-112 Principles of Engineering Drawing 3
RD-205 Design for Industry *or*
ART-101 Fundamentals of Design 3
CADD-234 Computer Assisted Design and Drafting 2
ENGL-415 Technical Writing *or*
ENGL-346 Research Reporting 3
Select 2 credits from:
BIO-XXX *Any Environmental Science* 2
Optional:
PKG-X49 Cooperative Education Experience 1-2

Emphasis

15-16 credits required

Select an emphasis to meet your career objectives.

Packaging Graphic Design

ART-100	Drawing I	3
ARTH-222	Introduction to Art *or*	
DES-205	Presentation Techniques	3
DES-200	Design Theory and Methods	3
DES-310	Graphic Design I	3
DES-360	Graphic Design II	3
DES-410	Product and Packaging Graphics	3
PKG-X49	Packaging Co-op	1-3

Manufacturing/Quality

INMGT-220	Quality Systems – Service Industries	3
INMGT-320	Quality Tools	3
INMGT-325	Quality Management	3

Select 9 credits from the following:

INMGT-305	Product and Inventory Control	3
INMGT-330	Material Handling	3
INMGT-340	Time and Motion Study	3
INMGT-350	Facilities Planning	3
BUACT-410	Manufacturing Cost Analysis	3
PKG-X49	Packaging Co-op	1-3

Packaging Design Research and Development

Take one of the following 6 credit blocks:

MECH-290	Mechanics of Solids I *or*	
PHYS-331	Statics	3
MECH-291	Mechanics of Solids II *or*	
PHYS-325	Strength of Materials	3
PHYS-321	Statics and Strength *and*	
CADD-436	Computer Design Problems	6
RD-320	Prototype Development and Model Making	3
MECH-392	Mechanics of Machinery I *or*	
MECH-333	Dynamics	3
RD-420	Research and Development *and*	
RD-421	Research and Development Laboratory	3
CHEM-341	Chemistry of Materials	4
PKG-X49	Packaging Co-op	1-3

Package Printing

GCM-151	Electronic and Conventional Prepress	3
GCM-266	Press Systems	4
GCM-270	Postpress Operations and Distribution	3
GCM-356	Color Electronic Prepress	2
GCM-475	Graphic Communications Cost Estimating	3
GCM-343	Graphic Communications Integrated Manufacturing Practicum	3
GCM-363	Package Printing	3
PKG-X49	Packaging Co-op	1-3

Business/Sales

BUACT-200	Financial – Managerial Accounting: Engineering Technology *or*	
BUACT-206	Introduction to Financial Accounting	2-3
BUMGT-304	Principles of Management	3
BUMKG-330	Principles of Marketing	3
BUMIS-333	Management Information Systems-Decision Support Systems	3
BUMKG-334	Salesmanship and Sales Management	3
PKG-X49	Packaging Co-op	1-3

Foods/Packaging

FN-240	Food Science	4
FN-342	Advanced Foods	3
FN-350	Food Processing	3

Select 6 credits from the following:

FN-442	Basic Sensory Analysis	3
FN-410	Food Policy Regulation and Law	3
FN-450	Food Engineering	3
BIO-406	Food Microbiology	3
CHEM-315	Food Chemistry	3
PKG-X49	Packaging Co-op	1-3

Psychology

Richard Tafalla, Program Director, 326 Education and Human Services Building, 715/232-1662

Introduction

The discipline of Psychology is the systematic study of thought, emotions and behavior of human beings. The B.A. in Psychology at UW-Stout has, as an overriding goal, a focus on application of theories, methods and concepts for the improved condition of people in a variety of environments. The program has been designed to adhere to the American Psychological Association standards for undergraduate education that emphasizes the scientific aspects of the profession as well as the liberal arts goals of Psychology. Students acquire competencies that lead to employment wherever psychology is applied in education institutions, public and private agencies, business and industry. In addition to the major study, all students are expected to develop literacy in the arts, humanities, natural sciences and social sciences. Each student is also expected to develop and demonstrate effective communication and quantitative skills as a part of the program's requirements.

Students are guided and assisted in developing a personal program plan centered on their individual needs and career goals. With careful planning, students may include self-planned concentrations with a more focused emphasis in one of a variety of unique career paths in psychology. Students entering the program should realize that they may need to obtain graduate level education or other advanced training for certain careers as practicing professional psychologists.

General Requirements
Bachelor of Arts Degree

Total for graduation	120 credits
General Education	42 credits
Major Studies	40 credits
Minor or second area of depth	13-22 credits
Additional Liberal Studies Requirement	14 credits
Electives	6 credits

Students must attain a minimum grade point average of 2.25 in required courses for the major and a minimum grade point average of 2.5 in other courses for the major.

Program Requirements

General Education

42 credits required

A. Communication Skills — 8 credits

ENGL-101	Freshman English – Composition *or*	
ENGL-111	Freshman English – Honors I	3
ENGL-102	Freshman English – Reading and Related Writing *or*	
ENGL-112	Freshman English – Honors II	3
SPCOM-100	Fundamentals of Speech	2

B. Analytic Reasoning — 6 credits

STAT-130	Elementary Statistics (*or more advanced*)	2
STAT-120	Introductory College Mathematics I (*or more advanced*)	4

C. Health and Physical Education — 2 credits

Courses must be from areas of health, physical education or nutrition.

D. Humanities and the Arts — 9 credits

Courses must be from three or more areas including art history, creative arts, foreign language and culture, history, literature, music appreciation, performing arts and philosophy.

E. Social and Behavioral Sciences — 9 credits

Courses must be from three or more areas including anthropology, economics, geography, political science, psychology and sociology.

F. Natural Sciences (with Lab) — 4 credits

G. Technology — 2 credits

H. General Education Electives — 2 Credits

Courses must come from categories A, B, D, E and F.

Major Studies

42 credits required

Required Courses — 20 credits

PSYC-110	General Psychology	3
PSYC-190	Psychological Research Methods	4
PSYC-210	Introduction to Applied Psychology	3
PSYC-390	Experimental Psychology	4
PSYC-320	Psychology: Its History and Systems	3
PSYC-xxx	Interpreting Psychological Research	3

Psychology Domains — 11-12 credits

Select at least one course from each domain:

Learning and Cognition

PSYC-451	Children's Learning	3
PSYC-330	Psychology of Learning	3
PSYC-442	Cognitive Processes	3

Individual Differences, Personality, Social Processes

PSYC-xxx	Personality	3
PSYC-270	Social Cognition and Behavior	3
PSYC-340	Psychology of Individual & Group Differences	3
PSYC-490	Psychological Measurement	3

Biological Bases

PSYC-432	Perception	3
BIO-361	Psychobiology	2
PSYC-335	Motivation and Emotion	3
PSYC-391	Applied Psychophysiological Methods	3

Developmental

PSYC-251	Child Psychology	3
PSYC-351	Childrenís Social Reasoning	3
PSYC-352	Adolescent Psychology	3
PSYC-372	Psychology of Sex and Gender	3

Applied — 3-6 credits

Consult with advisor for current list of selectives.

Experiential — 2 credits

PSYC-X49	Cooperative Education Experience in Psychology	1-8
PSYC-X98	Psychology Field Experience	2
PSYC-480	Individual Research Project I and	
PSYC-481	Individual Research Project II	1
PSYC-X99	Independent Study**	2-3

***Must involve research and be approved by the advisor as meeting the requirement of this category.*

Psychology Selectives

Selectives sufficient to meet minimum of credits for the major.

PSYC-100 Psychology Semester I – Foundations 1
XXX-XXX Selectives

Consult with advisor for current listing of selectives.

Minor or Second Area of Depth

13-22 credits required

Students are expected to take a minor, specialization or self-planned concentration. The self-planned concentration (22-credit minimum) allows students to select course work and learning experiences that relate to a particular area of interest, and must be planned with an adviser and approved by a committee of at least three persons designated by the Psychology Program Committee.

Additional Liberal Studies Requirements

8 credits required

Select 5 credits from the following:

BIO-XXX *Any Biology* 1-4
CHEM-XXX *Any Chemistry* 1-5
PHYS-XXX *Any Physics* 1-5

Select 3 credits from the following:

ENGL-XXX *Any Writing* 1-3

Electives

6 credits required

Retail Merchandising and Management

Kathleen Cochran, Program Director, 327 Home Economics Building, 715/232-1365

Introduction

Retail Merchandising and Management is a program designed to prepare resourceful, creative and competent leaders who understand the retail industry. Students take courses such as sales promotion, accounting, merchandising and distribution as well as communications, English, mathematics, social studies and the humanities. A minor in Business Administration can be included in the requirements of the program. A highlight of the program is a retail practicum or co-op where the student works in retailing. Optional experiences and academic opportunities are also available including study abroad at the American Fashion College in London and a national study tour to retail related industries.

This program provides opportunities for careers such as group manager, store buyer, divisional merchandise manager, resident buyer, operations manager, personnel director, promotion-publicity manager and fashion director. Graduates with the interior decorating concentration may seek employment in retailing, interior studios, consulting or operating their own business.

General Requirements

Bachelor of Science Degree

Total for graduation	124 credits
General Education	42 credits
Major Studies	24 credits
Concentration	43-51 credits
Electives	7-15 credits

A minimum grade point average of 2.0 is required for graduation.

Definitions

UW-Stout offers two concentrations that are similar in name. "Interior Design" *(B.F.A in Art)* and "Interior Decorating" *(B.S. in Retail Merchandising and Management)* are different, and offer students a choice of two professional areas.

Interior decorators furnish and accessorize existing or planned spaces using knowledge of color, fabrications, interior decoratives and furniture, fixtures and equipment to accommodate each client's individual taste.

The interior decorating concentration in this program provides graduates with business and decorating skills to enter the marketplace in retailing, interiors studios, or their own business, including consulting.

Interior designers produce functional and meaningful interior environments *(residential, commercial and public spaces)* by integrating human factors, art and design concepts, space planning, knowledge of architecture, building construction, codes, specifications, materials and furnishings.

The interior design concentration in the Art program, pages 32 to 35, prepares graduates to solve interior design problems, including the initial design and remodeling of structures, as part of an architectural design team or as a consultant.

Program Requirements

General Education

42 credits required

A. Communication Skills **8 Credits**

ENGL-101 Freshman English – Composition *or*
ENGL-111 Freshman English – Honors I 3
ENGL-102 Freshman English – Reading and Related Writing *or*
ENGL-112 Freshman English – Honors II 3
SPCOM-100 Fundamentals of Speech 2

A minimum grade of "C" is required in each course. When courses in this category are transferred from other schools, grades as well as credits will apply.

B. Analytic Reasoning **6 Credits**

MATH-XXX *Any approved mathematics* 4

Remaining courses must be from areas of math, logic, statistics and computer science.

C. Health and Physical Education **2 Credits**

Courses must be from areas of health, physical education or nutrition.

D. Humanities and the Arts **9 Credits**

Courses must be from three or more areas including art history, creative arts, foreign language and culture, history, literature, music appreciation, performing arts and philosophy.

E. Social and Behavioral Sciences **9 Credits**

ECON-210 Principles of Economics I 3

Remaining courses must be from two or more areas including anthropology, geography, political science, psychology and sociology.

F. Natural Sciences (with Lab) **4 Credits**

G. Technology **2 Credits**

H. General Education Electives **2 Credits**

Course(s) must come from categories A, B, D, E or F.

Major Studies

24 credits required

Students must complete 500 hours of approved and verified retail work experience (with a minimum of 250 hours with any one company) before completing the senior year.

BUACT-206 Introduction to Financial Accounting 3
BUMKG-330 Principles of Marketing 3
BURTL-222 Computer Applications 2
BURTL-227 Basic Merchandising 3
BURTL-430 Merchandise Planning and Control 4
BURTL-327 Store Management 3
BURTL-350 Marketing to Aging and Minority Consumers 2
PSYC-370 Interpersonal Effectiveness Training 2

Select one of the following:
SPCOM-200 Persuasive Speaking 2
SPCOM-206 Discussion 2
SPCOM-236 Listening 2

Concentrations

43-51 credits required

Fashion Marketing — 50 credits

BUMGT-304	Principles of Management	3
BURTL-222	Computer Applications	2
BUMKG-346	Target Marketing	3
BURTL-112	Trend Forecasting of Apparel/Home Products	3
BURTL-105	Introduction to Retail Merchandising and Management	1
APRL-140	Textiles	3
APRL-202	Quality Analysis of Sewn Products	3
BURTL-229	Visual Merchandising	3
BURTL-329	Fashion Merchandising Promotion	3
BURTL-389	Logistics for Retail Merchandising	3
BURTL-319	International Economic Trends in Textiles and Clothing	3
BURTL-425	Current Retail Strategies	2
BURTL-426	Fashion Retailing Practicum	4
ECON-215	Principles of Economics II	3
PSYC-382	Human Resource Management	3

Select one of the following:

BURTL-417	Social and Psychological Aspects of Clothing	3
APRL-411	History of Fashion	3

Select one of the following:

ENGL-320	Business Writing	3
ENGL-415	Technical Writing	3

Select one of the following:

BURTL-322	Merchandising and Marketing an Apparel Line	2
BURTL-335	Special Topics	2

Optional Experience/Opportunities

APRL-449	Retail Cooperative Education Experience	3-6
BURTL-477	Study Abroad – American Fashion College in London	16
BURTL-419	National Study Tour to Fashion Industries	1

Electives *(8 credits)*

A minor in Business Administration is automatic with completion of BUACT-207 Introduction to Corporate and Managerial Accounting in electives.

Buying/Management

(*with a minor in Business Administration*) — **48-51 credits**

BUACT-207	Managerial Accounting	3
BUMGT-304	Principles of Management	3
BUMIS-333	Management Information Systems	3
BUMKT-436	Marketing Management	3
BUMKT-346	Target Marketing	3
BURTL-105	Introduction to Retail Merchandising and Management	1
BURTL-229	Visual Merchandising	3
BURTL-329	Fashion Merchandise Promotion	3
BURTL-389	Logistics for Retail Merchandising	3
BURTL-417	Social and Psychological Aspects of Clothing	3
BURTL-425	Current Retail Strategies	2
BURTL-426	Fashion Retailing Practicum	4
ECON-215	Principles of Economics II	3
PSYC-382	Human Resource Management	3

Select one of the following:

BUINB-260	Introduction to International Business	3
BUINB-367	International Management	3
BUINB-485	International Marketing	3

Select one of the following:

ENGL-320	Business Writing	3
ENGL-415	Technical Writing	3

Select one of the following:

BURTL-335	Special Topics	2
BURTL-322	Merchandising and Marketing and Apparel Line	2

Buyers must take*:*

BURTL-490	Advanced Merchandise Plan Control	3

Optional Experience/Opportunities

APRL-449	Retail Cooperative Education Experience	3-6
BURTL-477	Study Abroad – American Fashion College in London	16
BURTL-419	National Study Tour to Fashion Industries	1

Electives *(7-10 credits)*

Human Resource Management — 43 credits

BUMGT-304	Principles of Management	3
BUINB-367	International Management	3
BURTL-105	Introduction to Retail Merchandising and Management	1
BURTL-329	Fashion Merchandise Promotion	3
BURTL-389	Logistics for Retail Merchandising	3
BURTL-425	Current Retail Strategies	2
BURTL-426	Fashion Retailing Practicum	4
ECON-215	Principles of Economics II	3
TRHRD-360	Training Systems in Business and Industry	3
PSYC-382	Human Resource Management	3
INMGT-400	Organizational Leadership	3
ECON-421	Collective Bargaining	2
SPCOM-414	Interviewing	1

Select two of the following courses:

PSYC-403	Managing Employee Reward Systems	3
PSYC-485	Recruitment and Selection of Human Resources	3
VTAE-334	Task Analysis	3

Select one of the following:

ENGL-320	Business Writing	3
ENGL-415	Technical Writing	3

Optional Experience/Opportunities

APRL-449	Retail Cooperative Education Experience	3-6
BURTL-477	Study Abroad - American Fashion College in London	16
BURTL-419	National Study Tour to Fashion Industries	1

Electives *(15 credits)*

A minor in Business Administration is automatic with completion of BUACT-207 Introduction to Corporate and Managerial Accounting in electives.

Interior Decorating — 47 credits

CADD-234	Computer Assisted Design and Drafting	2
BURTL-109	Introduction to Interior Decorating	3
APRL-145	Interior Decorating/Design Textiles	3
BURTL-229	Visual Merchandising	3
BURTL-409	Interior Decorating Studio (*seniors only*)	3
APRL-345	Textiles for Interiors	2
APRL-495	Historic and Contemporary Fabrics	3
FCSE-280	Family Housing	3
HT-493	Commercial and Residential Lighting	2
ART-101	Fundamentals of Design	3
DES-303	Interior Design	3
DES-314	Interior Specifications I	3
DES-304	Interior Design II	3
DES-205	Presentation Techniques	3
ARTH-333	Period Furnishings	3
ENGL-415	Technical Writing	3
BURTL-335	Special Topics	2

Optional Experience/Opportunities

APRL-449	Retail Cooperative Education Experience	3-6
BURTL-477	Study Abroad - American Fashion College in London	16
BURTL-419	National Study Tour to Fashion Industries	1

Electives *(11 credits)*

Service Management

Edward Harris, Program Director, 404 Home Economics Building, 715/232-2532

Introduction

The Service Management program at UW-Stout is the first of its kind in the nation. The major is unique because of its blend of service-specific core courses, for-profit and non-profit concentrations, and the choice of courses from areas of human development and relationships, business and finance, and communication and information technology. The professional core is based upon a strong foundation of arts and sciences.

The core service curriculum is focused upon three learning levels:

1. introductory level courses addressing the role of service in the global economy;
2. functional service area courses; and
3. upper level total service system integration courses.

An applied work experience via a field experience or cooperative education internship is required of each student. Area position titles include customer service operation/management, electronic information center management, human resource management, services quality management, service engineering, and customer relationship management.

General Requirements
Bachelor of Science Degree

Total for Graduation ..... 124 credits
General Education ..... 42 credits
Professional Components (Major Studies and Concentration) ..... 82 credits

Program Requirements

General Education

42 credits required

A. Communication Skills **8 credits**

ENGL-101 Freshman English – Composition *or*
ENGL-111 Freshman English – Honors I 3
ENGL-102 Freshman English – Reading and Related Writing *or*
ENGL-112 Freshman English – Honors II 3
SPCOM-100 Fundamentals of Speech 2

B. Analytic Reasoning **6 credits**

STAT-130 Elementary Statistics *or*
STAT-320 Statistical Methods 2-3
MATH-123 Finite Mathematics (*or more advanced*) 4

C. Health and Physical Education **2 credits**

Courses must be from areas of health, physical education or nutrition.

D. Humanities and the Arts **9 credits**

Courses must be from three or more areas including art history, creative arts, foreign language and culture, history, literature, music appreciation, performing arts and philosophy.

E. Social and Behavioral Sciences **9 credits**

ECON-210 Principles of Economics I *or*
ECON-201 General Economics 3
Remaining courses must be from two or more areas including anthropology, geography, political science and sociology.

F. Natural Science (with Lab) **4 credits**

G. Technology **2 credits**

H. General Education Electives **2 credits**

Courses must be from categories A, B, D, E and F.

Major Studies

15-22 credits required

SRVM-111 Introduction to Global Service Management 2
SRVM-210 Services Operations Management 3
SRVM-354 Services Marketing Management 3
SRVM-410 Electronic Services Management 3
SRVM-367 International Service Management 3
SRVM-XXX Field Experience, Cooperative Education or Internship 1-8

Concentrations

40-43 credits required

For-Profit Service Sector Organization **40-43 credits**

Business and Financial Management

Students must select at least one course from three of the subject areas.

RC-381 Occupational Safety/Loss Control 3
INMGT-120 Quality Concepts 3
INMGT-220 Quality Systems-Service Industry 3
INMGT-325 Quality Management 3
INMGT-400 Organizational Leadership 3
BUACT-206 Introduction to Financial Accounting 3
BUACT-207 Introduction to Corporate and Managerial Accounting 3
BUMGT-304 Principles of Management 3
BULGL-318 Business Law I 3
BUMKG-330 Principles of Marketing 3
BUMIS-333 MIS Decision Support Systems 3
BUACT-335 Accounting for Management Decisions 3
TRHRD-360 Training Systems in Business and Industry 3
BURTL-431 Service Management Strategies 3
SRVM-XXX Business Geographics 3
SRVM-XXX Service Response Logistics 3
SRVM-XXX Special Problems in Service Management 2
ECON-215 Principles of Economics II 3
STAT-320 Statistical Methods 3
PSYC-382 Human Resource Management 3

Human Development and Relationships

Select 10-11 credits

HDFL-115 Individual and Family Relations 3
HDFL-255 Lifespan Human Development 3
HDFL-270 Seminar on Self-Growth 2
HDFL-360 The Workplace and the Family 2
HDFL-XXX Gender Relationships 3
HDFL-XXX Relationship Theory System Dynamics 3
INMGT-400 Organizational Leadership 3
PHIL-375 Personal and Professional Ethics 3
PSYC-190 Psychological Research Methods 4
PSYC-379 Public Relations 2
PSYC-382 Human Resource Management 3
PSYC-403 Management of Employee Reward System 3
PSYC-490 Psychological Measurement 3
SRVM-260 Service Learning 3

Communication and Information Technology

Select 10-11 credits

MEDIC-360	Introduction to Media in Education and Training	2
MEDIA-440	Telecommunication Systems and Teleconferencing	2
TCS-281	Data Communications	3
TCS-283	Protocols and Interface Lab	3
TCS-305	Office Automation Technology	3
TCS-306	Introduction to Telephony	2
ENGL-207	Writing for the Media	3
ENGL-320	Business Writing	3
ENGL-415	Technical Writing	3
ENGL-346	Research Reporting	3
SPCOM-200	Persuasive Speaking	2
SPCOM-236	Listening	2
SPCOM-312	Intercultural Communication	2
SPCOM-308	Speech Skills for Business and Industry	2
XXX-XXX	*Any Foreign Language*	2-4

General Electives *(2 credits)*

Non-Profit Service Sector Organizations — 40-43 credits

Human Development and Relationships

Students must select at least one course from three of the subject areas.

HDFL-115	Individual and Family Relations	3
HDFL-255	Lifespan Human Development	3
HDFL-270	Seminar in Self-Growth	2
HDFL-310	Family Stress, Coping, and Adaptation	1
HDFL-360	Workplace and the Family	2
HDFL-XXX	Gender Relationships	2
HDFL-XXX	Relationship Theory System Dynamics	2
INMGT-400	Organizational Leadership	3
SRVM-260	Service Learning	3
SRVM-XXX	Special Problems in Service Management	2
PHIL-235	General Ethics	3
SOCWK-205	Introduction to Social Work	3
SOCWK-420	Child and Family Agencies	2
EDUC-307	Applied Human Relations	2
EDUC-336	Multiculturalism: Issues/Perspectives	3
REHAB-102	Community Resources	2
REHAB-300	Grantsmanship for Helping Professions	3
REHAB-458	Rehabilitation Support System Networking	1
REHAB-402	Rehabilitation Program Operations	3
PSYC-190	Psychological Research Methods	4
PSYC-210	Introduction to Applied Psychology	3
PSYC-281	Environmental Psychology	3
PSYC-335	Motivation/Emotions	3
PSYC-374	Psychology of Women	2
PSYC-375	The Psychology of Marriage and the Family	2
PSYC-379	Public Relations	2
PSYC-403	Management of Employee Reward Systems	3
PSYC-382	Human Resource Management	3
PSYC-490	Psychological Measurement	3
XXX-XXX	Social Service Sector Management	3

Business and Financial Management

Select 10-11 credits

TCS-307	Artificial Intelligence Applications in Business	2
RC-271	Safety Principles and Practices	3
TC-381	Occupational Safety/Loss Control	2
INMGT-340	Time and Motion Study	3
BUACT-206	Introduction to Financial Accounting	3
BUACT-207	Corporate and Managerial Accounting	3
BULGL-318	Business Law I	3
BUMKG-330	Principles of Marketing	3
BUMIS-333	MIS Decision Support Systems	3
BUACT-340	Business Finance	3
BUMKG-479	Marketing Research	3
BUINB-XXX	*Any international business course*	3
TRHRD-360	Training Systems in Business and Industry	3
ECON-215	Principles of Economics II	3
ECON-325	Economics and Business Statistics	3
STAT-320	Statistical Methods	3

Communication and Information Technology

Select 10-11 credits

MEDIA-360	Introduction to Media in Education and Training	2
MEDIA-440	Telecommunication Systems and Teleconferencing	2
TCS-281	Data Communications	3
TCS-283	Protocols and Interface Lab	3
TCS-305	Office Automation Technology	3
TCS-306	Introduction to Telephony	2
ENGL-207	Writing for the Media	3
ENGL-320	Business Writing	3
ENGL-415	Technical Writing	3
ENGL-346	Research Reporting	3
SPCOM-200	Persuasive Speaking	2
SPCOM-236	Listening	2
SPCOM-312	Intercultural Communication	2
SPCOM-308	Speech Skills for Business and Industry	2
XXX-XXX	*Any Foreign Language*	2-4

General Electives *(2 credits)*

Individualized Concentration

Self-designed concentration approved by program director. Courses must be from each area. Course selection requires prior approval by the program director.

http://www.uwstout.edu/programs/bsse/

Special Education

Introduction

The B.S. in Special Education prepares teachers to be reflective practitioners who demonstrate knowledge, skills and dispositions relative to planning and preparation, the classroom environment, instruction, and professional responsibilities. The UW-Stout framework is compatible with the national Council for Exceptional Children (CEC) knowledge and skill base for all beginning special education teachers. Special education is founded on the philosophy of advocacy for persons with exceptionalities and their families, and of embracing and teaching to individual differences and needs. Special educators must know the characteristics of the learners they serve, possess the skills to design effective interventions, and the dispositions to practice within the standards established by CEC.

Curriculum of the program prepares teachers of students with cognitive, emotional/behavioral, and learning disabilities. Graduates of the program will be prepared to work with students with CD, E/BD, and LD, with an emphasis on Cognitive Disabilities. Graduates of the program will be prepared to work at the early childhood through middle childhood level and the early adolescence through adolescence level.

General Requirements
Bachelor of Science Degree

Total for graduation ..... 124 credits
General Education ..... 45 credits
Major Studies ..... 79 credits

Students must demonstrate proficiency in American Red Cross First Aid procedures, either by verifying current certification with their adviser, or by satisfactory completion of HLTH-340 ARC Standard First Aid and Personal Safety (*adding 1 credit to the program credit total*).

* Required courses with a grade point of 2.0 (C) or better. Courses in which a student earns less than the required 2.0 must be retaken and at least a 2.0 earned prior to student teaching.

Program Requirements

General Education

45 credits required

A. Communication Skills — **8 credits**

ENGL-101 Freshman English – Composition* *or*
ENGL-111 Freshman English – Honors I* 3
ENGL-102 Freshman English – Reading and Related Writing* *or*
ENGL-112 Freshman English – Honors II* 3
SPCOM-100 Fundamentals of Speech* 2

B. Analytic Reasoning — **6 credits**

MATH-118 Concepts of Mathematics (*or more advanced*)* 4
STAT-130 Elementary Statistics* 2

C. Health and Physical Education — **2 credits**

Courses must be from areas of health, physical education or nutrition.

Teacher Education Framework

The University of Wisconsin-Stout's conceptual framework for teacher education is based upon a Reflective Practitioner Model that has constructivism as its theoretical base. The process of becoming a reflective practitioner follows a framework for teaching that includes: a) planning and preparation, b) classroom environment, c) instruction and d) professional responsibilities. Students proceed through a series of three benchmarks as they move toward licensure.

Benchmark I: Acceptance into Teacher Education

Teacher education students will begin fulfilling their requirements for Benchmark I: Acceptance into Teacher Education Program as they take their first 40 credits.Requirements for Benchmark I are as follows:

- Complete EDUC-326 Foundations of Education
- Complete 40 credits
- Pass the PPST
- 2.75 cumulative GPA
- Pass the required teacher background check
- Students must have earned a grade of at least 2.00 (C) in ENGL-101 and ENGL-102 or ENGL-111 and ENGL-112.
- Students must have earned a minimum grade of 2.00 (C) in SPCOM-100 Fundamentals of Speech. Complete General Education Technology requirement
- Receive three recommendations to enter into teacher education

Benchmark II: Application for Student Teaching

Benchmark II must be completed *prior* to student teaching.

- Complete electronic portfolio
- Receive satisfactory portfolio assessment by faculty
- Pass Content Knowledge Exam
- Receive clearance through an updated background check
- Attain a 2.75
- Complete a satisfactory tuberculosis test
- Submit copies of resume to the School of Education prior to student teaching
- Complete Application for Student Teaching form

Benchmark III: Program completion

Benchmark III must be completed before you can be recommended for licensure.

- Complete electronic portfolio and receive a basic or higher proficiency level of assessment
- Complete all program coursework
- Meet all program-specific requirements
- Student teach at three levels: infant/toddler/preschool, kindergarten and primary.
- Receive a satisfactory student teaching assessment

D. Humanities and the Arts **10-11 credits**

LIT-XXX	*Any Literature*	3
HIST-120	Early U.S. History* *or*	
HIST-121	Modern U.S. History*	3
HIST-210	Modern World*	3

Remaining courses must be from areas of art history, music appreciation, or performing arts.

E. Social and Behavioral Sciences **9 credits**

GEOG-104	World Geography*	3
POLS-210	American Government*	3
PSYC-110	General Psychology	3

F. Natural Sciences (with Lab) **8-9 credits**

BIO-101	Introductory Biology*	4

Select two of the following courses:

CHEM-105	Visualizing Chemistry *	2
PHYS-151	Astronomy*	3
PHYS-211	Introduction to Physics*	3
PHSY-255	Meteorology*	2
PHYS-258	Introduction to Geology*	2

G. Technology **2 credits**

Professional Studies*

79 credits required

Professional Education Core **19 credits**

EDUC-303	Educational Psychology*	3
EDUC-326	Foundations of Education*	2
EDUC-336	Multiculturalism: Issues and Perspectives*	2
EDUC-376	Field Experience — Cross Cultural Experience*	1
EDUC-380	Reading/Language Arts: Elementary Education	3
EDUC-381	Preclinical: Elementary Education Language Arts*	1
EDUC-382	Secondary Reading and Language Development*	2
EDUC-415	Classroom Management*	2
SPED-430	Inclusion of Students with Exceptional Needs*	3

Special Education **60 credits**

HDFS-255	Lifespan Human Development *or*	
PSYC-352	Adolescent Psychology *and*	
PSYC-251	Child Psychology	3
REHAB-310	Vocational Evaluation	3
SPCOM-310	Communication disorders	3
SPED-100	Introduction to Special Education	1
SPED-300	Introduction to Cognitive Disabilities	3
SPED-301	Introduction to Learning Disabilities	3
SPED-322	Curriculum and Instruction: Severe Disabilities	2
SPED-323	Mild Disabilities: Social Studies and Science	3
SPED-324	Curriculum and Instruction: Career and Transition Education	3
SPED-326	Pre-Student Teaching: Cognitive Disabilities	2
SPED-328	Assessment for IEP/ITP	3
SPED-338	Pre-Student Teaching Children and Youth with Disabilities	2
SPED-420	Schools, Families, and Community Collaboration	3
SPED-440	Diagnosis and Remediation of Reading/Language/Math	4
SPED-447	Behavior Problems of Children and Adolescents	3
SPED-481	Student Teaching Special Education *or*	
SPED-488	Intern Teaching Special Education	16
SPED-490	Behavioral Intervention in Schools	3

Technical Communication

Bruce Maylath, Program Director, 150C Harvey Hall, 715/232-1358

Introduction

Technical Communication is a rapidly growing profession. Development of new technologies has increased the demand for professionals who can clearly explain policies, products and services to clients and customers. UW-Stout's program integrates communication theory with coursework in a chosen applied field. Examples of applied fields include biomedical engineering, packaging, international studies, quality management, telecommunications, tourism, training and development, art and design, and business and management. Graduates of this program will have the skills to research, visualize, design, develop and oversee publication of both print and electronic documents.

Copy editing and preparation, multimedia or hypertext writing, and critical, technical and freelance writing courses prepare you to write clearly for specific audiences. In addition, courses in an applied field of your choice supply the strong technical background crucial to communicating complex ideas to different audiences. Elective courses give you the chance to explore other areas, such as photography or creative writing. All students will participate in a co-op, internship or practicum during the junior year.

General Requirements

Bachelor of Science Degree

Total for graduation ..... 124 credits
General Education ..... 43 credits
Major Studies ..... 81 credits

Program Requirements

General Education

43 credits required

A. Communication Skills **8 credits**

ENGL-101 Freshman English – Composition *or*
ENGL-111 Freshman English – Honors I 3
ENGL-102 Freshman English – Reading and Related Writing *or*
ENGL-112 Freshman English – Honors II *or*
ENGL-113 Honors Seminar 3
SPCOM-100 Fundamentals of Speech 2

B. Analytic Reasoning **6 credits**

Courses must be from areas of math, logic, statistics and computer science.

C. Health and Physical Education **2 credits**

Courses must be from areas of health, physical education or nutrition.

D. Humanities and the Arts **9 credits**

Courses must be from three or more areas including art history, creative arts, foreign language and culture, history, literature, music appreciation, performing arts and philosophy.

E. Social and Behavioral Sciences **9 credits**

Courses must be from three or more areas including anthropology, economics, geography, political science, psychology and sociology.

F. Natural Sciences (with Lab) **4 credits**

G. Technology **2 credits**

H. General Education Electives **3 credits**

Course(s) must come from categories A, B, D, E or F.

Major Studies

81 credits required

Rhetoric and Language Skills **14 Credits**

ENGL-343 Rhetoric of Technology *or*
ENGL-371 Advanced Rhetoric 3
ENGL-247 Critical Writing 3
ENGL-340 The Structure of English 3
PHIL-235 General Ethics 3
SPCOM-312 Intercultural Communication 2

Technical Communication Skills **15 Credits**

ART-101 Fundamentals of Design 3
ENGL-121 Introduction to Technical Communication 1
ENGL-207 Writing for the Media 3
ENGL-415 Technical Writing
ENGL-435 Writing Technical Manuals 3
SPCOM-308 Speech Skills for Business and Industry 2

Production Skills **11 Credits**

GCM-141 Graphic Communication and Electronic Publishing 3
ENGL-385 Document Design 2
ENGL-388 Writing Multimedia *or*
ENGL-361 Hypertext Writing 3
ENGL-225 Copyediting and Preparation 3

Project Management and Client Relations Skills **11 Credits**

ENGL-449 Cooperative Educational Experience or
ENGL-437 Technical Writing Practicum 1-3
ENGL-471 Freelancing/Professional Writing 3
INMGT-365 Project Management 3
PSYC-379 Public Relations 2

Language/Computer Science **8-9 Credits**

Choose one track:
XXX-XXX *Any Foreign Language I* 4
XXX-XXX *Any Foreign Language II* 4
or
CS-142 Computer Programming for Multimedia I 3
CS-143 Computer Programming for Multimedia II 3
LOG-301 Logic 3

Applied Field **17 Credits**

An official minor or an equivalent field of study approved by the program director. Courses selected must total at least 17 credits.

Electives **4-5 credits**

Technology Education

Ken Welty, Program Director, 224D Communication Technologies Building, 715/232-1206

Introduction

Technology Education is a Bachelor of Science degree program consisting of 124 semester credits of general, professional and technical course work. The program leads to teaching certification in all 50 states. Although this program is designed to lead to an education degree, graduates find challenging career opportunities in business and industry as well. Students study fields such as communication, construction, manufacturing and transportation. They work with technologies such as computers, robots and lasers, and with more conventional equipment used in processing materials, energy and information. Students are required to complete at least 42 credits of general education in areas such as English, mathematics, science, speech and social studies. They are also required to complete 39 credits of professional education in areas of curriculum and instruction, human behavior and student teaching in a secondary school. Forty-three credits of technical work are also required. Of this, 30 credits are prescribed for all students in the majors and 13 credits permit study in a selected area of emphasis.

General Requirements
Bachelor of Science Degree

Total for graduation ..... 124 credits
General Education ..... 42 credits
Major Studies ..... 82 credits

Students must have a cumulative grade point average of 2.75 or better to be admitted to advanced standing for teacher education. Graduation requires a 2.75 overall grade point average. See pages 17-18 for additional information. Participation in a related organization is required.

Program Requirements

General Education

42 credits required

A. Communication Skills — **8 credits**

ENGL-101 Freshman English – Composition *or*
ENGL-111 Freshman English – Honors I 3
ENGL-102 Freshman English – Reading and Related Writing *or*
ENLG-112 Freshman English – Honors II 3
SPCOM-100 Fundamentals of Speech 2

B. Analytic Reasoning — **6 credits**

MATH-XXX *Any approved Mathematics* 4-5

Remaining courses must be from areas including math, logic, statistics and computer science.

C. Health and Physical Education — **2 credits**

Courses must be from areas of health, physical education or nutrition.

D. Humanities and the Arts* — **9 credits**

LIT-XXX *Any Literature* 3
XXX-XXX *Any Creative/Performing Arts* 3

*Remaining course must be from areas including art history, creative arts, foreign language and culture, history, literature, music appreciation, performing arts or philosophy. * Either HIST-210 Modern World must be taken under this category or ANTH-220 Cultural Anthropology must be taken under Category E.*

E. Social and Behavioral Sciences * — **9 credits**

POLS-210 Government 3
PSYC-110 General Psychology 3

Remaining course must be from areas of anthropology, economics, geography, political science, psychology or sociology.
** See previous note under Category D.*

F. Natural Sciences (with Lab) — **4 credits**

Choose a biology course, and either a chemistry or physics course.

G. Technology — **2 credits**

H. General Education Electives — **2 credits**

Courses must come from categories A, B, D, E and F.

Major Studies

82 credits required

Fundamentals of Technology — **14 credits**

MFGT-102 Manufacturing Materials and Processes I 3
MFGT-103 Manufacturing Materials and Processes II 3
MFGT-XXX Materials and Processes for Technology Education 3
RD-205 Design for Industry 3
TECED-390 Laboratory and Classroom Management in Technology Education 2

Human Endeavors — **15 credits**

TCS-304 Communications and Information Systems 3
INMGT-314 Industrial Enterprise Practicum 3
AEC-172 Construction Technology 3
TRANS-202 Transportation Systems 2
TRANS-203 Transportation Systems Laboratory 1
TRANS-204 Energy Technology 2
TRANS-205 Energy Technology Laboratory 1

Advanced Technical Studies **14 credits**

Students will select one of the following emphases.

Automation and Manufacturing

MFGT-303	Computer Aided Manufacturing	3
MFGT-305	Robotics	2
MFGT-310	Manufacturing System	3
MFGT-337	Numerical Control	3
CADD-112	Engineering Drawing I	2

Design and Pre-engineering

CADD-112	Engineering Drawing I	2
CADD-113	Engineering Drawing II	3
CADD-234	Computer Assisted Design and Drafting	2
RD-320	Prototype Development and Model Making	3
RD-420	Research and Development	2
RD-421	Research and Development Laboratory	1

Architecture and Construction

AEC-131	Architectural Graphics	3
AEC-175	Construction Materials	1
AEC-233	Architectural Design I	3
AEC-237	Architectural Technology	3
AEC-270	Heavy Construction Methods and Equipment	3

Energy and Power Mechanics

ELEC-204	Electricity/Electronics Fundamentals	3
POWER-103	Power Mechanics	2
POWER-260	Introduction to Fluid Power	2
POWER-303	Mechanical Power Transmission	3
POWER-499	Independent Study	3

Graphic Communications

GCM-141	Graphic Communications and Electronic Publishing	3
GCM-151	Electronic Prepress	3
GCM-266	Press Systems	4
GCM-345	Publications Production *or*	
GCM-343	Graphic Communications Practicum	3

Telecommunications Communications

TCS-281	Data Communications	3
TCS-283	Protocols and Interfacing Laboratory	3
GCM-499	Independent Study	3
TCS-306	Introduction to Telephony	2
ELEC-204	Electricity/Electronics Fundamentals	3

General Technology

MEDIA-304	Elementary Photography	3
GCM-141	Graphic Communications and Electronic Publishing	3
MFGT-303	Computer Aided Manufacturing	3
CADD-112	Engineering Drawing *or*	
AEC-131	Architectural Graphics	2-3
POWER-103	Power Mechanics	2

Electronics and Computers

ELEC-204	Electricity/Electronics Fundamentals	3
ELEC-271	Digital Logic and Switching	3
ELEC-374	Microprocessor Fundamentals	3
POWER-395	Seminar	1
ELEC-XXX	Electrical Systems Application	3

Professional Education **39 credits**

TECED-160	Introduction to Technology Education	1
TECED-260	Curriculum, Methods and Assessment for Technology Education	3
TECED-360	Field Experience for Technology Education	1
TECED-460	Advanced Curriculum Methods and Assessment for Technology Education	3
TECED-409	Student Teaching	16
EDUC-303	Educational Psychology	3
EDUC-312	Introduction to Curriculum, Methods and Assessment	2
EDUC-326	Foundations of Education	2
EDUC-336	Multiculturalism: Issues and Perspectives	2
EDUC-376	Field Experience – Cross Cultural Experience	1
EDUC-382	Secondary Reading and Language Development	2
SPED-430	Inclusion of Students With Exceptional Needs	3

Vocational Certification

A student who wishes to become certifiable to teach an advanced level occupational skills course in Wisconsin must complete this degree program, a course in Principles of Vocational, Technical and Adult Education, and a course in Organization and Administration of Cooperative Education Programs. The student must also have a minimum of 2,000 hours of related work experience.

Minors

Introduction

Minors are defined as either "studies in the discipline" or as "teaching." Teaching minors are those approved by the State Department of Public Instruction for certification. Requirements for the teaching minors include an education major, a methods course in the field, and some student teaching experience in the minor field in addition to the required credits within the minor. The Approval Form for Minor Program must be submitted to the department offering the minor before starting the minor to assure an acceptable sequence of courses. Approval forms and minor program plans are available in the office of the department offering the minor.

Applied Foreign Language

Department of Speech Communication, Foreign Language, Theatre and Music

Before declaring the minor, student must have approval of an individual course plan. The applied project requires signatures of both major and minor program advisors. Until a specific course is developed, the applied project will be an independent study.

26 credits are required.

XXX-XXX	Elementary Foreign Language A	8
XXX-XXX	Intermediate Foreign Language A	8
XXX-XXX	Elementary Foreign Language B	8
XXX-XXX	Applied project linking foreign language with student's major program	2

Art

Department of Art and Design

22 credits are required.

Required Courses

AR-100	Drawing I	3
ART-101	Fundamentals of Design	3
ART-222	Introduction to Art	3

Selectives

The additional 13 selective credits may be accumulated to overview or concentrate in one area. Students may select courses in drawing, painting, printmaking, ceramics, art history, art metals, sculpture, interior design, industrial design and graphic design to fulfill the balance of the Art minor. A minimum of six credits must be completed at UW-Stout to receive an Art minor. A minimum grade of "C" (2.0) is required in all courses.

Biology

Department of Biology

20 credits are required

Required courses

BIO-122	Introductory Biology	3
BIO-332	Genetics	3

Select one option from the following:

Option I - Physiology Emphasis:

BIO-234	Physiology and Anatomy	4
BIO-362	Advanced Physiology	3

Option II - Ecology Emphasis:

BIO-150	Environmental Science	2
BIO-242	Botany *or*	
BIO-252	Zoology	4
BIO-350	Ecology	3

Option III - Self-Directed Emphasis:

Selectives

For options I and II, choose credits from list provided by advisor to complete 20 credits. Students that choose the Self-Directed option III must work with an advisor in the Biology Department and must have the approval of the chair. Selected courses must include two laboratory courses, at least one of which must be at the 300 level or above.

Business Administration

Department of Business

22 credits are required.

Required Courses

BUACT-206	Introduction to Financial Accounting	3
BUACT-207	Introduction – Corporate and Managerial Accounting	3
BUMGT-304	Principles of Management	3
BUMKT-330	Principles of Marketing	3
ECON-210	Principles of Economics I	3
ECON-215	Principles of Economics II	3

Selectives

Select 4 credits from the list supplied by the department.

Chemistry

Department of Chemistry

22 credits are required.

Required Courses

CHEM-125 Principles of Chemistry for Health Sciences *or*
CHEM-135 College Chemistry I 5
CHEM-136 College Chemistry II 5
CHEM-201 Organic Chemistry I 4

Select one of the following courses:

CHEM-204 Organic Chemistry II Lecture 3
CHEM-331 Quantitative Analysis 3
CHEM-335 Instrumental Methods of Analysis 3
CHEM-301 Physical Chemistry Lecture and 3
CHEM-303 Physical Chemistry Laboratory 1

Selectives

Additional departmental offerings to complete 22 credits will be selected. A minimum grade of "C" (2.0) is required in all chemistry courses applied toward the chemistry minor.

Coaching

Department of Physical Education and Athletics

24 credits are required.

Area I: Medical Emergencies (5 credits required)

HLTH-340 ARC Standard First Aid and Personal Safety 2
HLTH-350 Prevention and Care of Athletic Injuries 3

Area II: Principles and Psycho-Social Foundations of Coaching (4 credits required)

PE-352 Theory and Management of Coaching 2
PE-362 Psycho-Social Aspects of Athletics 2

Area III: Methods and Strategies of Coaching (2 credits required)

PE-401 Coaching Gymnastics 2
PE-460 Coaching Basketball 2
PE-461 Coaching Football 2
PE-465 Coaching Competitive Swimming 2
PE-470 Coaching Baseball 2
PE-471 Coaching Track and Field 2
PE-477 Coaching Tennis 2
PE-478 Coaching and Officiating Volleyball 2
PE-479 Coaching Wrestling 2
PE-480 Coaching Young Athletes 2
PE-481 Coaching Ice Hockey 2
PE-483 Coaching Softball 2
PE-483 Coaching Soccer 2

Area IV: Kinesiological and Biomechanical Foundations of Coaching (7 credits required)

BIO-132 Human Biology *or*
BIO-134 Physiology and Anatomy 4
HLTH-355 Kinesiology 3

Area V: Physiological Foundations of Coaching (3 credits required)

HLTH-365 Physiology of Exercise 3

Area VI: Practicum in Coaching (required)

PE-490 Practicum in Coaching 1-3

Area VII: Selectives

Select additional courses from the list supplied by the department for the 24-credit minor.

Computer Science

Department of Mathematics, Statistics and Computer Sciences

22 credits are required.

Required Courses

CS-144 Computer Science I 3
CS-145 Computer Science II 3
CS-241 Assembly Language Programming 3
CS-341 Data Structures 4

Selectives

Select additional courses to complete 22 credits from the approved list supplied by the department. Grades for courses taken for the minor must be 2.0 (C) or better.

Construction Risk Control

Departments of Industrial Management and Technology

18 credits are required.

Required Courses

RC-388 Construction Safety 2
RC-382 Construction Risk Management 3
RC-383 Voluntary OSHA Compliance 3
AEC-449 Cooperative Education Experience 2

Selectives

Select 8 credits for selectives from program plan sheet supplied by advisor. The minor is specifically limited to Construction majors or those who have taken the eight construction course sequence containing the integrated Risk Control content.

Economics

Department of Social Sciences

22 credits are required.

Required Courses

ECON-210 Principles of Economics I 3
ECON-215 Principles of Economics II 3
ECON-325 Economic and Business Statistics or
ECON-470 Economic Model-building and Forecasting 3
ECON-410 Microeconomics 3
ECON-415 Macroeconomics 3

Selectives

Select additional courses to complete 22 credits from the approved list supplied by the department.

English Teaching

Department of English and Philosophy

25-26 credits are required.

Required Courses

ENGL-340 The Structure of English 3
ENGL-247 Critical Writing 3
LIT-255 Recent World Literature 3
LIT-306 Shakespeare 3
ENGL-407 Teaching English in the Secondary and Middle School 2

Monitored student teaching in the discipline is required.

Select 3 credits from each of the following:

Group A

LIT-248 American Literature 3
LIT-260 Modern American Literature 3

Group B

LIT-301 English Literature 3
LIT-350 Modern British Literature 3

Selectives

Select 2-3 additional credits to complete the minor from the approved list supplied by the department.
Note: Grades of 2.5 or better in English and Literature courses are required for the minor to be awarded.

English Literature

Department of English and Philosophy

15 credits are required.
Take one or more courses in each of the following categories:

Historical Perspective (3 or more credits)

LIT-250 Classical and Biblical Literature in Translation 3
LIT-248 American Literature 3
LIT-350 Modern British Literature 3
LIT-260 Modern American Literature 3
LIT-301 English Literature 3
LIT-306 Shakespeare 3
LIT-450 Studies in Literature 1-3

Cultural and Societal Perspectives (3 or more credits)

LIT-202 The Family in Literature 3
LIT-208 Fiction Into Film 3
LIT-255 Recent World Literature 3
LIT-272 Woman Writers 3
LIT-273 American Multicultural Literature 3
LIT-281 Recent American Literature 3
LIT-450 Studies in Literature 1-3

Genre (3 or more credits)

LIT-203 American Poets 3
LIT-205 The Short Story 3
LIT-286 Detective Fiction 3
LIT-300 Children's Literature 3
LIT-304 American Folklore 3
LIT-280 Best Sellers 3
LIT-285 Science Fiction 3
LIT-450 Studies in Literature 1-3

At least six credits in the minor must be taken at UW-Stout. A student must have a 2.75 grade point average in those English and Literature courses presented for the minor.

English Writing

Department of English and Philosophy

15 credits are required

Select 12-15 credits from the following:

ENGL-207 Writing For the Media 3
ENGL-320 Business Writing 3
ENGL-245 Creative Writing 3
ENGL-246 Informational Writing 3
ENGL-247 Critical Writing 3
EGNL-356 Creative Writing Workshop 3
ENGL-399 Independent Study 1-2
ENGL-418 Writing On Issues 1
ENGL-325 Copy Editing and Preparation 2
ENGL-499 Independent Study 1-2
ENGL-415 Technical Writing 3
ENGL-346 Research Reporting 3

Selectives

Select 0-3 additional credits to complete the minor from the approved list supplied by the department.
At least six credits in the minor must be taken at UW-Stout. A student must have a 2.75 grade point average in those English courses presented for the minor.

Food Technology

Department of Food and Nutrition

35 credits are required.

Required Courses

INMGT-200 Production and Operations Management 3
PKG-180 Packaging Fundamentals 2
FN-124 Foods *or*
FN-240 Food Science 4
FN-212 Nutrition 3
FN-342 Advanced Foods 3
FN-438 Experimental Foods 3
FN-350 Food Processing 3
BIO-306 General Microbiology 4
CHEM-311 Biochemistry 4
CHEM-315 Food Chemistry 3
PHYS-211 Introduction to Physics 3

Gaming Entertainment Management

Department of Hospitality and Tourism

22 credits are required.

Required Courses

HT-315 Gaming Management 3
HT-316 Casino Operations Management 3
HT-317 Psychosocial Issues in Gaming 3
HT-418 Casino Tourism 3

Select one course from each of the following groups:

HT-251 Hospitality Marketing and Sales *or*
BUMKG-330 Principles of Marketing *or*
SRVM-354 Services Marketing Management 3

HT-361 Hospitality Accounting *or*
BUACT-206 Introduction Financial Accounting 3

HT-460 Hospitality Law and Liability *or*
BULGL-318 Business Law 3

HT-360 Hospitality for the Handicapped Traveler 1

Health and Fitness

Department of Physical Education and Athletics

18-21 credits are required.

Required Courses

HLTH-375	Organization and Administration of Health Education	3
HDFL-115	Individual and Family Relations	or
HDFL-728	Fmaily Life Issues	2-3
FN-102	Nutrition for Healthy Living	2
BIO-132	Human Biology	or
BIO-234	Physiology and Anatomy	4
HLTH-360	Personal Health and Wellness	3
HLTH-340	ARC Standard First Aid and Personal Safety (*or current certification*)	2
HT-390	Recreation and Fitness Management	2
HT-XXX	Health and Fitness Practicum	2

Selectives

1-4 additional credits of selectives from program plan sheet supplied by advisor.

Health and Fitness Education

Department of Physical Education and Athletics

24 credits are required.

Required Courses

BIO-132	Human Biology	or
BIO-234	Physiology and Anatomy	4
HLTH-360	Personal Health and Wellness	3
HLTH-375	Methods in Health Education	2
HLTH-376	Organization and Administration of Health Education	3
HLTH-485	Student Teaching in Health Education	2

Selectives

10 additional credits of selectives from program plan sheet supplied by advisor. A teaching major with professional education courses is required for teacher certification.

History

Department of Social Sciences

22 credits are required.

Required Courses

HIST-120	Early United States History	3
HIST-121	Modern United States History	3
HIST-140	Western Civilization	3
HIST-141	Western Civilization	3

Selectives

Additional departmental offerings to complete 22 credits will be selected.

Students who take a teaching minor must include two of the following courses:

HIST-322	African-American History	3
HIST-360	Asian History	3
HIST-380	Latin American History	3

Two credits of EDUC-305 Teaching Practicum must also be taken, in addition to the 22-credit minor.

Human Development and Family Studies

Department of Human Development, Family Living, and Community Educational Services

22 credits are required.

Required Courses

HDFL-115	Individual and Family Relations	3
HDFL-225	Lifespan Human Development	3
HDFL-215	Dynamics of the Family	3

Additional departmental offerings to complete 22 credits will be selected.

Human Resource Management

Department of Psychology

22 credits are required. Students are required to fulfill credit requirement in Sections A (9 credits) and F (2 credits) and complete credit requirements in 4 of the remaining 5 areas (Sections B-E, G).

A. Core courses (9 credits)

PSYC-382	Human Resource Management	3
PSYC-485	Recruitment and Selection of Human Resources	3
PSYC-403	Management of Employee Reward Systems (Compensation)	3

B. Diversity (2-3 credits)

PSYC-340	Psychology of Individual and Group Difference	3
INMGT-415	Women and Minorities in Management	2
PSYC-372	Psychology of Sex and Gender	3
REHAB-462	Disability Management	3

C. Teamwork (3 credits)

SPCOM-314	Interviewing	1
INMGT-430	Employee Involvement: Work Teams	2

D. Organization Training and Development (3 credits)

TRHRD-360	Training Systems in Business and Industry	3
INMGT-325	Quality Management	3

E. Leadership (3 credits)

EDUC-4XX	Transformational Leadership	3
INMGT-400	Organizational Leadership	3

F. Experiential (2 credits, with approval)

PSYC-X98	Psychology Field Experience	2
PSYC-X49	Cooperative Education Experience	1-8
PSYC-XXX	Human Resource Management Practicum	2

G. Other Supportive Courses (2-3 credits, with approval)

BULGL-318	Business Law I	3
BULGL-401	Legal Environment of Business	2
ECON-420	Labor Economics	3
ECON-421	Collective Bargaining and Labor Relations	2
INMGT-320	Quality Assurance	3
INMGT-325	Quality Management	3

Journalism

Department of English and Philosophy

22 credits are required.

Required Courses

MEDIA-304	Elementary Photography	2-3
GCM-141	Graphic Communications and Electronic Publishing	3
ENGL-207	Writing for the Media	3
ENGL-210	Journalism Practicum	1
ENGL-325	Copy Editing and Preparation	2

Writing Selectives

Select 3 to 10 credits from the following:

ENGL-320	Business Writing	3
ENGL-245	Creative Writing	3
ENGL-246	Informational Writing	3
ENGL-247	Critical Writing	3
ENGL-415	Technical Writing	3

Technical Specialty Selectives

Select up to 7 credits from the following:
Projects Emphasis:

ENGL-210	Journalism Practicum	1
ENGL-437	Technical Writing Practicum	1-3

Public Relations Emphasis:

BUMKG-370	Principles of Advertising	3
PSYC-379	Public Relations	2

Media Emphasis:

ENGL-318	Mass Communication: Effects of Technology on Society	3

Production Emphasis:

GCM-345	Publications Production	3

Lodging Management

Hospitality and Tourism Department

23 credits are required.

Required Courses

BUACT-206	Introduction to Financial Accounting	3
BULGL-318	Business Law	3
HT-133	Front Office Management	3
HT-130	Housekeeping Procedures	2
HT-200	Hospitality Organization Management	3
HT-251	Hospitality Marketing	3
HT-361	Hospitality Accounting	3
HT-430	Lodging Administration	3

Materials

Chemistry Department

22-27 credits are required.

Required Courses

MFGE-333	Polymer Processes	3
MFGE-343	Casting, Ceramics and Powder Metal Processes	3
CHEM-201	Organic Chemistry I	4
CHEM-301	Physical Chemistry Lecture	3
CHEM-303	Physical Chemistry Laboratory	1
CHEM-341	Chemistry of Materials	4

Selectives
Select one course with approval of minor adviser.

CHEM-440	Advanced Materials Laboratory	1-3
XXX-X99	Independent Study in Materials	1-3

Select one option with approval of minor adviser
Option 1

CHEM-470	Chemistry of Materials II	3

Option 2

PHYS-331	Statics	3
PHYS-333	Dynamics	3

Option 3

MFGE-293	Engineering Mechanics	3
MFGE-294	Mechanics of Materials	3

As background for the materials minor, it is recommended that either CHEM-135 College Chemistry I, or CHEM-125 Chemistry for the Health Sciences be selected as a natural science general education course.

Mathematics

Department of Mathematics, Statistics and Computer Sciences

Teaching Certification

24 credits are required.

Twenty-two credits must be in the discipline and two credits in a teaching practicum.
Choose one option:

Option 1:

STAT-330	Probability and Statistics for Engineering and the Sciences	3

Option 2:

STAT-331	Probability and Mathematical Statistics I	3
STAT-332	Probability and Mathematical Statistics II	3

Option 3:

STAT-320	Statistical Methods	3

Required Courses

MATH-153	Calculus I *or*	
MATH-156	Calculus and Analytic Geometry I	4-5
MATH-154	Calculus II *or*	
MATH-157	Calculus and Analytic Geometry II	4-5
MATH-262	Modern Geometry	3
MATH-275	Linear Algebra	3
MATH-370	Modern Algebra I	3
EDUC-305	Teaching Practicum	2
CS-X4X	*Formal computer programming course – CS-141 or higher*	2-3

Selectives
Additional courses to complete 24 credits will be selected with advisement.

Non-teaching Minor

22 credits required.

Required Courses

Select one option:

Option 1:

MATH-153 Calculus I 4
MATH-154 Calculus II 4

Option 2:

MATH-156 Calculus and Analytic Geometry I 5
MATH-157 Calculus and Analytic Geometry II 5

Select at least 9 credits from the following:

STAT-330 Probability and Statistics for Engineering and the Sciences ... 3
STAT-331 Probability and Mathematical Statistics I 3
STAT-332 Probability and Mathematical Statistics II 3
MSCS-344 Graph Theory With Applications in Computer Science 3
MSCS-446 Numerical Analysis I 3
MSCS-447 Numerical Analysis II 3
MATH-158 Calculus III 3
MATH-250 Differential Equations/Linear Algebra 3
MATH-255 Differential Equations 3
MATH-262 Modern Geometry 3
MATH-275 Linear Algebra 3
MATH-370 Modern Algebra I 3
MATH-371 Modern Algebra II 3
MATH-450 Real Analysis I 3
MATH-460 Complex Variables With Applications 3

Select up to 6 credits from the following:

CS-141 Computer Programming – BASIC 2
CS-144 Computer Science I 3
CS-145 Computer Science II 3
STAT-320 Statistical Methods 3

The course STAT-320 may not be included if either STAT-331 or STAT-332 is selected.

Note: *Both the teaching and non-teaching minors require a grade point of 2.0 or better in all courses applied to the minor.*

Physics

Department of Physics

22 credits are required.

Required Courses

Select one group from the following:

Group I:

PHYS-241 College Physics I 5
PHYS-242 College Physics II 5

Group II:

PHYS-281 University Physics I 5
PHYS-282 University Physics II 5
PHYS-329 Atomic and Nuclear Physics 3

Selectives

At least 9 credits from departmental offerings at the 300-level or higher must be included in the minor program.

Property Management

Department of Hospitality and Tourism

21-24 credits are required.

Required Courses

INMGT-450 Maintenance Management 2
BUACT-206 Introduction to Financial Accounting 3
BULGL-365 Principles of Real Estate 2
HT-370 Principles of Property Management 3
HT-470 Seminar in Property Management 2
HT-4XX *Any hospitality and tourism field experience* 1-3
BULGL-318 Business Law I *or*
HT-460 Hospitality Law and Liability 3

Real Estate Tracks (choose one)

Track 1: Real Estate Operations

HT-371 Commercial/Residential Property Development and Management 3
HT-330 Resort Operations and Management 3

Track 2: Resort Operations

HT-XXX Time Share Administration 3
HT-XXX Time Share Management 3

Track 3: Individual Program Design

Any 300- or 400-level course from AEC, BULGL, INMGT or HT approved by the Minor adviser.

Psychology

Department of Psychology

18 credits are required.

Required Courses

PSYC-110 General Psychology 3
PSYC-190 Psychological Research Methods 4
PSYC-251 Child Psychology *or*
PSYC-352 Adolescent Psychology 3
PSYC-460 Personality and Mental Health *or*
PSYC-361 Abnormal Psychology *or*
PSYC-473 Psychology of Stress 2-3

Selectives

Select 5-6 or more credits from any of the courses above not already taken or from the list supplied by the department.

Quality Management

Department of Industrial Management

20-21 credits are required.

Required Courses

INMGT-120 Quality Concepts 3
INMGT-320 Quality Assurance 3
INMGT-325 Quality Management 3
INMGT-220 Quality Systems – Service Industries *or*
INMGT-420 Quality Practicum 3-4

Selectives

Select 8 additional credits from the list supplied by the department.

Retailing

Department of Business

21 credits are required.

Required Courses

BURTL-112	Trend Forecasting	3
BURTL-227	Basic Merchandising	3
BURTL-229	Visual Merchandising *or*	
BURTL-327	Store Management	3
BURTL-329	Fashion Promotions	3
BURTL-425	Current Retail Strategies	2
BURTL-430	Merchandise Planning and Control	4

Selectives

3-6 additional retail course credits approved by the department.

Sociology

Department of Social Sciences

21 credits are required.

Required Courses

ANTH-220	Cultural Anthropology	3
SOC-110	Introductory Sociology	3
SOCWK-205	Introduction to Social Work	3

Selectives

Additional courses to complete 21 credits will be selected from the program plan sheet provided by the department.

Note: A minimum grade of C- is required for each course in the minor with an overall grade point average of 2.5 in required courses. The three required courses and at least two selective courses must be completed at UW-Stout to fulfill the residency requirement.

Spanish

Department of Speech Communication, Foreign Language, Theatre and Music

24 credits are required.

Required Courses

SPAN-121	Practical Spanish I *and*	
SPAN-122	Practical Spanish II	4
	or	
SPAN-103	Elementary Spanish I	4
SPAN-104	Elementary Spanish II	4
SPAN-201	Intermediate Spanish I	4
SPAN-202	Intermediate Spanish II	4
SPAN-227	Conversation and Composition	2
SPAN-229	Hispanic Literature in America	2

4-6 additional Spanish course credits approved by the Spanish advisor.

Speech Communication

Department of Speech Communication, Foreign Language, Theatre and Music

Teaching minor

22 credits are required.

Required Courses

ENGL-318	Mass Communication in American Society	3
SPCOM-101	Forensics	1-2
SPCOM-102	Forensics	1-2
SPCOM-200	Persuasive Speaking	2
SPCOM-202	Oral Interpretation	2
SPCOM-206	Discussion	2
SPCOM-208	Theory of Communication	3
SPCOM-210	Interpersonal Speech Communication	1-2
SPCOM-236	Listening	2
SPCOM-310	Introduction to Speech Correction	2
SPCOM-312	Intercultural Communication	2
SPCOM-412	Teaching Speech in Middle and Secondary Schools	2

To achieve certification, students must participate in a monitored student teaching experience in a speech communication discipline or disciplines. A minimum grade point average of 2.75 with no grade lower than "C" is required. At least six (6) credits of the minor must be from courses offered by the UW-Stout Speech department to fulfill the residency requirement.

Discipline Minor

17 credits are required.

Required Courses

SPCOM-100	Fundamentals of Speech	2

Selectives

Select 17 credits from the list supplied by the department and approved by the Speech Minor adviser to best fulfill your individual, career and academic needs.

Technical Writing

Department of English and Philosophy

15 credits are required.

Required Courses

ENGL-325	Copy Editing and Preparation	2
ENGL-415	Technical Writing	3
ENGL-435	Writing Technical Manuals	3
ENGL-437	Technical Writing Practicum	1-3

Select two courses from the following:

XXX-X49	Cooperative Education Experience	2-8
ENGL-207	Writing for the Media	3
ENGL-246	Informational Writing	3

Tourism

Department of Hospitality and Tourism

24 credits are required.

Required Courses

HT-140 Introduction to Tourism 2
HT-340 Development of Tourism Attractions 3
HT-240 Tourism Goods and Services 3
HT-440 Sociocultural Systems of Tourism 3
HT-341 Geography of Tourism 3
HT-360 Hospitality and the Handicapped Traveler 1

Select 4 credits from the following:

FREN-101 Elementary French I 4
FREN-102 Elementary French II 4
SPAN-103 Elementary Spanish I 4
SPAN-104 Elementary Spanish II 4

A comparable number of credits in a well-known language used in travel and trade may be substituted.

Selectives
Five credits required.

Traffic Safety Education

Risk Control Center

22 credits are required.

Required Courses

RC-271 Safety Principles and Practices 3
RC-374 Driver Education Laboratory Methods and Techniques 3
RC-375 Driver and Traffic Safety 3
RC-341 Alcohol, Drugs and Accident Prevention 3
RC-372 Behavioral Approach to Accident Prevention 3

Select 7 credits from the following:

MEDIA-360 Introduction to Media in Education and Training 2
RC-381 Occupational Safety/Loss Control 2-3
TECED-205 Teaching Methods Technology/Vocational Education 2
TECED-405 Curriculum Technology/Vocational Education 2
FCSE-201 Presentation Strategies for Family and Consumer Sciences .. 2
FCSE-301 Family and Consumer Sciences Education Curriculum 3
SCOUN-301 Introduction to Guidance 2
EDUC-303 Educational Psychology 3
HLTH-340 ARC Standard First Aid and Personal Safety 2

Vocational Rehabilitation

Department of Rehabilitation and Counseling

22 credits are required.

Required Courses

REHAB-101 Introduction to Rehabilitation 3
REHAB-102 Community Resources 3
REHAB-205 Rehabilitation Practicum 3-4
REHAB-230 Psychosocial Aspects of Disability 3

Selectives
Additional departmental offerings to complete 22 credits will be selected.

Women's Studies

College of Arts and Sciences

22 credits are required.

Required Courses

WS-210 Introduction to Women's Studies 2

Selectives
Additional courses to complete 20 credits will be selected with approval of the advisor.

Specializations

Introduction

Specializations are programs of study, with carefully constructed learning goals and experiences, and evaluation procedures. While course work may be included in a specialization, students may also work to meet learning goals through internships, working with a mentor, successfully completing a proficiency examination or certification examination, or other non-classroom experiences. Courses may come from several departments and involve faculty from several disciplines.

Courses taken to complete a specialization may also fit elsewhere in a student's program of study.

Students who complete a specialization will have the specialization recorded on their transcript and will receive a certificate of completion.

Disability Accommodation in Business and Industry

This specialization will provide participants with the skills to work effectively within business and industry settings to maximize gainful employment opportunities and productivity for persons with disabilities. Participants will be able to develop, implement and evaluate disability initiatives and policies, and understand the need to work effectively at all levels of business and industry in order to provide optimal accommodations for persons with disabilities.

Requirements for the Specialization

Intended Outcome	Learning Activity	Evaluation
Students will be able to:	The following courses (*22 credits*) are required. Alternative means of demonstrating competencies will be reviewed by faculty.	
1. Identify principles and concepts of organizational structure, leadership styles, and corporate culture that impact the employment of people with disabilities in business and industry.	INMGT-400/600 Organizational Leadership ..... 3 REHAB-462/662 Management of Employees with Disabilities ..... 3 PSYC-382/582 Human Resource Management 3	Students must achieve a "C" or better in all required courses to become specialized.
2. Describe the roles of a rehabilitation professional when providing employer-based disability services, which includes working at all levels of business and industry from a team perspective.	REHAB-360/560 Assistive Technology ..... 2 REHAB-462/662 Management of Employees with Disabilities ..... 3 REHAB-460/660 Rehabilitation in the Private Sector 3	***Employer Analysis** In order to develop an understanding of business and industry and the roles of a rehabilitation professional who provides disability services in business and industry, an integral component of the specialization is an in vivo exposure to a business environment that will provide an internal perspective. The student/employer interaction will be culminated by an APA style paper to include a general overview of the company, a review of the company's experience with disability, an analysis of policies and procedures specific to disability related problems and risks, a review of previous interactions with rehabilitation professionals and consultants, identification of the primary barriers to cost containment and facilitating effective management of disabilities, and recommendations for future service delivery emphasizing the potential role(s) of the rehabilitation professional. Evaluation for the employer analysis exercise: oral presentation and faculty review of and approval of the final report.
3. Demonstrate attitudes and skills needed to solve unique problems of workers with disabilities, including the issues of return-to-work.	REHAB-360/560 Assistive Technology ..... 2 REHAB-462/662 Management of Employees with Disabilities ..... 3 REHAB-460/660 Rehabilitation in the Private Sector ..... 3 REHAB-7XX Field Study *or* REHAB-480 Advanced Practicum or REHAB-XXX Cooperative Education 2*	
4. Recognize the need to address the concerns, needs, and fears of employers in hiring and employing people with disabilities.	RC-387/587 Human Factors Engineering/Ergonomics ..... 3 REHAB-462/662 Management of Employees with Disabilities ..... 3 REHAB-460/660 Rehabilitation in the Private Sector ..... 3 REHAB-7XX Field Study *or* REHAB-480 Advanced Practicum *or* REHAB-XXX Cooperative Education ..... 2* PSYC-382/582 Human Resource Management 3	
5. Demonstrate the principles of cost containment in disability management including workplace safety, ergonomics, employee assistance programs, and disability prevention.	RC-381/581 Principles of Occupational Safety and Loss ..... 3 RC-387/587 Human Factors Engineering/Ergonomics ..... 3 REHAB-462/662 Management of Employees with Disabilities ..... 3 REHAB-7XX Field Study *or* REHAB-480 Advanced Practicum *or* REHAB-XXX Cooperative Education 2*	
6. Explain pertinent laws and legislative initiatives as well as relevant insurance regulations and their impact on business and industry.	REHAB-462/662 Management of Employees with Disabilities ..... 3 REHAB-460/660 Rehabilitation in the Private Sector 3	
7. Analyze company's policies and procedures specific to disability-related problems and risks including identification of the primary barriers to cost containment.	REHAB-7XX Field Study *or* REHAB-480 Advanced Practicum *or* REHAB-XXX Cooperative Education 2*	

Gerontology Certification

The populations of the United States and the world are growing older, precipitating important changes in health and social policies. At present, one in eight Americans are 65 or older. These growing numbers will increase demand for individuals with gerontological skills and knowledge. The Gerontology Certification requires 20 credits, or equivalent, and includes a required core and practicum through which students study aging as an interactive process of physical, social and psychological forces. Two credits of field experience with aging-related content will be required in the student's own major area of study.

Requirements for the Specialization

Intended Outcome	Learning Activity	Evaluation
The following outcomes will be achieved through required courses:		
1. Identify major biological theories of aging.	BIO-125 Biology of Aging 3	Exam, papers, reports 2.0 grade point average
2. Identify and describe the biological changes associated with aging.		
3. Recognize normal and pathological changes that occur in organ systems with age.	HDFL-340/540 Human Development: Aging Person ..... 3 BIO-125 Biology of Aging 3	Exam, papers, reports 2.0 grade point average
4. Comprehend the social, political and economic aspects of aging.	HDFL-340/540 Human Development: Aging Person 3	Exam, papers, reports 2.0 grade point average
5. Recognize and discard stereotypes associated with aging.		
6. Work in direct or indirect service to the older population.	Field Experience	Evaluation of field experience
The following outcomes may be achieved through the student's selection of elective courses:		
7. Understand lifespan concept of development and demonstrate an integrated knowledge of the aging individual within the context of family.	HDFL-255 Lifespan Human Development 3	Exam, papers, reports 2.0 grade point average
8. Understand the reciprocal nature of family caregiving.	HDFL-341/541 Family Caregiving to Dependent Elders 1	Exam, papers, reports 2.0 grade point average
9. Understand the process of grief for older adults.	HDFL-425/625 Death Education and Counseling in Families 2	Exam, papers, reports 2.0 grade point average
10. Recognize personal and cultural attitudes toward death.	HDFL-351 Death and the Family 1	Exam, papers, reports 2.0 grade point average
11. Identify and understand the ethical issues related to health care for the elderly.	HDFL-345/545 Health Care Dilemmas and Decisions for Families 2	Exam, papers, reports 2.0 grade point average
12. Demonstrate ability to plan and develop nutritious meals and programs for older individuals which take into account physical and financial limitations.	FN-405/605 Nutrition for the Aged 2	Exam, papers, reports 2.0 grade point average
13. Assist aging individuals, especially those with physical limitations, to find suitable and aesthetically pleasing clothing. Understand the product needs of older consumers and the promotional strategies used to market to this population.	BURTL-335/535 Topics: Minorities and Aging Consumers 2	Exam, papers, reports 2.0 grade point average
14. Understand counseling approaches and techniques for working with aging families in order to construct models for counseling older individuals and their families.	COUN-494/694 Counseling the Older Person 2-3	Exam, papers, reports 2.0 grade point average
15. Assist older individuals and their families with financial planning.	HT-488 Financial Planning for Retirement 2	Exam, papers, reports 2.0 grade point average
16. Identify the effects of exercise upon an older individual.	HLTH-365 Physiology of Exercise 3	Exam, papers, reports 2.0 grade point average
17. Explain the psychological and physiological dimensions and impact of disability from a developmental perspective.	BIO-220 Physiology of Disabilities ..... 3 REHAB-230 Psychosocial Aspects of Disability ..... 3 REHAB-682 Sexuality and Disability 2	Exam, papers, reports 2.0 grade point average
18. Identify needs and difficulties unique to older disabled workers.	REHAB-355/555 Rehabilitation of the Older Disabled Worker 2	Exam, papers, reports 2.0 grade point average
19. Identify formal support systems available to older persons with special needs or national, state and local needs.	REHAB-458/658 Rehabilitation Support System Networking 2	Exam, papers, reports 2.0 grade point average
20. Explain various understandings of the meaning of aging as portrayed in literature.	LIT-450 Aging in Literature 3	Exam, papers, reports 2.0 grade point average
21. Identify architectural barriers confronted by the disabled traveler.	HT-360/560 Hospitality and the Handicapped Traveler 1	Exam, papers, reports 2.0 grade point average
22. Understand the range of technological options available to assist frail and/or disabled elderly.	REHAB-360/560 Assistive Technology 2	Exam, papers, reports 2.0 grade point average
23. Identify and describe absorption and metabolism of medications in the elderly.	BIO-358 Introduction to Pharmacology 2	Exam, papers, reports 2.0 grade point average

International Studies

As the world moves toward the 21st century, people in all countries and cultures are increasingly interacting with each other. Many UW-Stout graduates find work in multinational businesses and international tourism. Others go into the Peace Corps or other types of international volunteer work. Many more use their leisure time for travel or study abroad. Even those who never venture abroad find their professional, civic and personal lives impacted by the expansion of international relationships.

The International Studies specialization at UW-Stout is flexibly designed to offer students an opportunity to better understand other cultures and international relationships, and to compete more successfully in the workplace. The specialization requires all students to complete six core courses or their equivalents, then select an option that best meets their interests and needs.

All students in the specialization are strongly encouraged to plan work or study experience abroad.

Requirements for the Specialization

Intended Outcome	Learning Activity	Evaluation
	Complete 15-18 credits as required below.	
1.0 Develop understanding of international relations. 1.1 Develop understanding of concepts used to analyze international relations. 1.2 Recognize participants and patterns of international relationships. 1.3 Identify and analyze global problems arising from international relations.	POLS-340 International Relations ..... 3 *or equivalent course work abroad.*	Exams, papers and reports – 2.0 grade point average.
2.0 Develop understanding of cultural variation and analysis. 2.1 Develop understanding of concepts used to analyze cultural variation. 2.2 Recognize and begin to understand the complexity of cultural variation that exists in the world. 2.3 Develop a cross-cultural approach to analyzing international problems.	*Select 2-3 credits from the following:* HDFL-335 Seminar–The Culturally Distinct Child and Family ..... 2 ANTH-220 Cultural Anthropology ..... 3 EDUC-336 Multiculturalism: Issues and Perspectives ..... 2 *or equivalent course work abroad*	Exams, papers and reports – 2.0 grade point average.
3.0 Develop understanding of the geography and peoples of the world. 3.1 Develop understanding of geographical concepts. 3.2 Recognize components of the physical setting in which cultures exist and international relations occur. 3.3 Recognize and analyze the relationships between the physical world, on the one hand, and cultural variation and international relations on the other.	GEOG-104 World Geography ..... 3 *or equivalent course work abroad.*	Exams, papers and reports – 2.0 grade point average.
4.0 Develop introductory knowledge of a second language.	*Equivalent of two semesters of college-level language study in one language – 8 cr.*	Exams, papers and reports averaging a grade of 2.0 or certification of equivalent level of proficiency by the language faculty.
5.0 Develop introductory knowledge of the history, culture and/or social institutions of a country or region other than one's own.	*One 2-3 credit area studies course. Students are encouraged to take this course work abroad. Students not going abroad should select one of the following courses:* CAS-250 Soviet Seminar Tour ..... 2 CAS-X99 Independent Study ..... 1-3 HIST-320 History of Russia ..... 3 HIST-360 Asian History ..... 3 HIST-380 Latin American History ..... 3 PHIL-215 Eastern Philosophy 3	Exams, papers and reports – 2.0 grade point average.
6.0 Integrate knowledge with experience in another country or culture. 6.1 Study or work in another culture. 6.2 Appreciate diversity of cultural values. 6.3 Integrate intercultural experiences with other knowledge about international relations.	*Select one of the following courses/experiences:* HDFL-336 Experience: The Culturally Distinct Child and Family ..... 1 CAS-X99 Independent Study ..... 1-3 EDUC-376 Field Experience–Cross Cultural Experience ..... 1 XXX-XXX *Enrollment in international exchange program, or for credit in a study abroad program for a semester or summer term. Competion of exchange or study abroad program* ***would fulfill this objective****.*	Exams, papers and reports – 2.0 grade point average.

Specialized Learning Objectives	Learning Activity	Evaluation
Option A: International Business		
A1.0 Develop understanding of international business practices. **A2.0 Develop understanding of international trade, development, marketing, finance, business law, management and/or transportation.**	*Complete 9 credits or equivalent courses abroad.* BUINB-260 Introduction to International Business ..... 3 *Select 6 credits from the following:* BUMGT-346 Seminar ..... 1-3 BUINB-538 International Logistics ..... 3 BUINB-485 International Marketing ..... 3 BUINB-488 International Business Practicum ..... 3 ECON-425 Economic Development ..... 3 ECON-480 International Trade ..... 3 International internship, co-op, field experience or independent study abroad 1-3	Exams, papers and reports – 2.0 grade point average.
Option B: International Tourism		
B1.0 Identify international components of the tourism industry. B1.1 Recognize the economic role of tourism in a global economy. B1.2 Recognize the role of government in planning/development of tourism. B1.3 Analyze current issues related to international tourism. B1.4 Analyze/become familiar with hospitality and tourism publications. **B2.0 Assess quality and quantity of selected tourism resources throughout the world.** B2.1 Analyze spatial patterns of connection, circulation, interaction, transportation and communication associated with the geography of tourism. B2.2 Analyze international tourism's locational trends. B2.3 Develop world map reading skills related to tourism. **B3.0 Analyze current tourism topics.** **B4.0 Experience working in tourism industry abroad.**	*Select 7-9 credits or equivalent courses abroad:* HT-140 Introduction to Tourism ..... 2 HT-440 Sociocultural System of Tourism ..... 3 HT-341 Geography of Tourism ..... 3 HT-481 Special Problems in Habitational Resources ..... 2 International internship, co-op, field experience or independent study abroad 1-3	Exams, papers and reports – 2.0 grade point average.
Option C: Language Studies *Includes the 8 credits from the core requirement*		
C1.0 Develop ability to communicate in a second language.	*Equivalent of two years of college-level study of one foreign language. Internship, co-op, field experience or other evidence of language use with native speakers is strongly encouraged.*	Exams, papers and reports – 2.0 grade point average; or certification of equivalent level of proficiency by the language department.
Option D: Area Studies		
D1.0 Increase understanding of the history, culture and social institutions of a country or region other than one's own.	*Select 8-9 credits from the following:* Internship, co-op, field experience or independent study abroad ..... 1-3 *(Students are encouraged to take area studies abroad and/or select appropriate courses from list in 5.0 of core objectives.)*	Exams, papers and reports – 2.0 grade point average.
Option E: Comparative Education		
E1.0 Develop an understanding of the sociopolitical context of education in other countries. **E2.0 Develop an understanding of teaching practice appropriate to other countries.**	*Select 6 credits or equivalent courses abroad.* Student teaching, internship, co-op, field experience or independent study abroad 1-3	Exams, papers and reports – 2.0 grade point average.
Option F: Apparel Design/Manufacturing – Retailing		
F1.0 Increase understanding of international economic trends influencing textiles, clothing and related areas. **F2.0 Develop understanding of international centers serving the fashion, clothing, textiles and related arts area.** **F3.0 Increase understanding of international historical influences on present day fashion and clothing.**	*Complete 8-9 credits or equivalent courses abroad:* BURTL-319 International Economic Trends in Textiles and Clothing ..... 3 *Select 5-6 credits from the following:* APRL-410 History of Costume – Ancient to European ..... 3 APRL-411 History of Fashion – 19th Century to Present ..... 3 BURTL-417 Social/Psychological Aspects of Clothing ..... 3 *and/or select up to 3 credits from the following:* BURTL-477 Study Abroad – American Fashion College ..... 16 APRL-405 International Study Tour to the Fashion Industry ..... 1-6 International internship, co-op, field experience or independent study abroad 1-3	Exams, papers and reports – 2.0 grade point average.
Option G: International Apparel Manufacturing		
G.1.0 Increase understanding of international economic trends influencing textiles, clothing and apparel manufacturing. **G.2.0 Analyze sourcing strategies for apparel products and manufacturing.** **G.3.0 Develop understanding of international business practices through formal course work and/or field experience.**	*Complete 10-12 credits from the following courses or equivalent courses abroad:* **Required** BUINB-260 Introduction to International Business ..... 3 BURTL-319 International Economic Trends in Textiles and Clothing ..... 3 BURTL-471 International Textile Apparel Sourcing ..... 3 *Select one of the following courses*: BUINB-485 International Marketing ..... 3 APRL-405 International Study Tour to the Fashion Industry ..... 1-6 ECON-680 International Trade ..... 3 International internship, co-op or field experience 1-3	Exams, papers and reports — 2.0 grade point average

Professional Writing

The Professional Writing specialization, unlike other programs at UW-Stout, is creation-oriented not production-oriented.

The specialization addresses an area of critical importance – clearly communicating information. The program is intended for those who wish to gain professional writing skills to help them find employment, and those who wish to improve their writing skills to gain promotions or explore new career directeons. Graduates of this program will be able to clarify technical concepts for a wide range of audiences, especially non-technical ones.

The specialization will integrate various elements of degree programs – writing, public relations, design, graphic arts and others – in one efficient package.

Requirements for the Specialization

Intended Outcome	Learning Activity	Evaluation
1. Interact with clients in order to produce their documents.	*Follow a sequence of activities, under supervision, to produce a document, starting with an initial interview and progressing to a final document.* ENGL-210 Journalism Practicum ..... 1 ENGL-399 Independent Study *or* ENGL-X49 Cooperative Education Program in Arts and Sciences ..... 2-3 ENGL-437 Technical Writing Practicum* ..... 1-3 PSYC-379 Public Relations* ..... 2 PSYC-479 Advanced Public Relations 2	1. Review of completed documents by teacher. 2. Acceptance of document by client. 3. Client's evaluation of writer as having adequately performed at all stages in the sequence–use questionnaire.
2. Design documents according to client specifications.	*Under supervision of a teacher, learn basic principles of document design. Under supervision of a teacher, determine client's design needs. Produce document.* ENGL-210 Journalism Practicum ..... 1 ENGL-399 Independent Study *or* ENGL-X49 Cooperative Education Program in Arts and Sciences ..... 2-3 ENGL-437 Technical Writing Practicum* ..... 1-3 PSYC-379 Public Relations* ..... 2 PSYC-479 Advanced Public Relations 2	1. Review of completed design by teacher. 2. Acceptance of design by client.
3. Write and produce a final document by following a logical production procedure.	*Structure sequence of activities that teach students the stages of interacting with a printer to produce a final version of a document.* GCM-141 Graphic Communications and Electronic Publising ..... 3 GCM-345 Publications Production ..... 3 DES-210 Letter Form Design ..... 3 ENGL-399 Independent Study *or* ENGL-X49 Cooperative Education Program in Arts and Sciences ..... 2-3 ENGL-437 Technical Writing Practicum* 1-3	1. Evaluation of writing by teacher–oral, excercises. 2. Acceptance of text by client. 3. Presentation of final document by writer. 4. Teacher's evaluation of adequate performance at all stages in the sequence–observations.
4. Adapt, direct and produce information for a particular audience.	*Structured sequence of activities which train students in concepts of audience adaptation and develop flexibility in adapting to audience.* ENGL-210 Journalism Practicum ..... 1 ENGL-320 Business Writing ..... 3 ENGL-246 Informational Writing ..... 3 ENGL-399 Independent Study *or* ENGL-X49 Cooperative Education Program in Arts and Sciences ..... 2-3 ENGL-325 Copy Editing and Preparation* ..... 2 ENGL-415 Technical Writing ..... 3 ENGL-437 Technical Writing Practicum* 1-3	1. Teacher evaluation that student has conceptual knowledge of adapting for an audience–tests, excerises. 2. Teacher evaluation that student has flexible ability in adapting for an audience–excercises.
5. Organize and present written material in a clear, concise manner.	*Structured sequence of activities which train students in organizing for a particular audience situation.* ENGL-210 Journalism Practicum ..... 1 ENGL-320 Business Writing ..... 3 ENGL-246 Informational Writing ..... 3 ENGL-399 Independent Study *or* ENGL-X49 Cooperative Education Program in Arts and Sciences ..... 2-3 ENGL-325 Copy Editing and Preparation* ..... 2 ENGL-415 Technical Writing ..... 3 ENGL-437 Technical Writing Practicum* 1-3	1. Teacher evaluation that student has acceptable conceptual knowledge of organization and concise presentation–excercises. 2. Teacher evaluation that student has flexibility in presenting different organizations–excercises. 3. Acceptance of text by client.
6. Produce information according to business and industry standards of style.	*Structured sequence of activities which train students in style concepts and flexibility.* ENGL-207 Writing for the Media ..... 3 ENGL-320 Business Writing ..... 3 ENGL-246 Informational Writing ..... 3 ENGL-399 Independent Study *or* ENGL-X49 Cooperative Education Program in Arts and Sciences ..... 2-3 ENGL-415 Technical Writing 3	1. Teacher evaluation that student has acceptable level of style conceptual knowledge–tests, excercises. 2. Teacher evaluation that student has acceptable style flexibilty–exercises. 3. Acceptance of text by client.

* *Required courses. A student may petition the specialization program director for an exception to the required courses based upon prior experience and may choose another course in the block. This specialization requires a minimum of 12 credits* (10 credits of required courses and 2 credits of electives).

Public Relations/Public Information

This specialization is a suitable support program for undergraduate students enrolled in any program the university offers. Virtually every area of professional preparation can benefit from the study of public relations/public information. Institutions and organizations are increasingly aware of the need for sound management practices when dealing with publics and the value of those practices to society.

If UW-Stout students are to achieve their professional goals, they must be competent in developing relationships with many different organizations and understanding the attitudes and values represented by those organizations. Students completing this specialization would be better able to utilize professional communication skills, play an integrative role in organizational management, assist in the definition and implementation of policy, and represent the organization's rights and responsibilities to the various publics.

Students should apply for the specialization one year before completing the requirements for it. To be admitted to the specialization, a student must have completed 12 credits in the behavioral and/or social sciences and six credits in business or business-related course work.

The specialization will be awarded to the student once all course work required for it has been completed and a minimum 3.0 grade point average has been earned in those courses.

Requirements for the Specialization

Intended Outcome	Learning Activity	Evaluation
1. Anticipate and identify public opinion.	*Complete the following courses:* PSYC-377 Consumer Psychology ..... 3 PSYC-379 Public Relations 2	Demonstrate recognition and comprehension of public opinion through minimum 2.75 grade point average on course expectation.
2. Interpret and communicate public opinions' effect on the plans and operations of an organization.	*Complete the following courses:* PSYC-377 Consumer Psychology ..... 3 PSYC-379 Public Relations 2	Demonstrate the ability to assess the effect of public opinion on organizations through minimum 2.75 grade point average on course expectation.
3. Recognize socially responsible behavior on the part of organizations.	*Complete the following courses:* PHIL-275 Personal and Professional Ethics ..... 3 PSYC-377 Consumer Psychology ..... 3 PSYC-379 Public Relations 2	Demonstrate ability to identify organizational behavior that is socially responsible through minimum 2.75 grade point average on course expectation.
4. Anticipate public reaction to organization's policy decisions and courses of action.	*Complete the following courses:* SPCOM-200 Persuasive Speaking ..... 2 PSYC-479 Advanced Public Relations 2	Demonstrate awareness of public reaction to organizational activity through minimum 2.75 grade point average on course expectation.
5. Enhance the organizational image through advice to management.	*Complete the following courses:* SPCOM-200 Persuasive Speaking ..... 2 PSYC-479 Advanced Public Relations 2	Demonstrate talent to provide sound advice regarding organizational image through minimum 2.75 grade point average on course expectation.
6. Design and conduct organizational audits *(using approved public relations research techniques).*	*Work on problem-based projects from the following:* PSYC-379 Public Relations ..... 2 PSYC-479 Advanced Public Relations ..... 2 PSYC-493 Field Practicum in Public Relations Specialization 1-3	Provide evidence of ability to develop tools for assessment and investigation of external and internal publics.
7. Compile and analyze data.	*Work on problem-based projects from the following:* PSYC-379 Public Relations ..... 2 PSYC-479 Advanced Public Relations ..... 2 PSYC-493 Field Practicum in Public Relations Specialization 1-3	Demonstrate comprehensive analysis through reports and presentations.
8. Set objectives, plan and budget resources for public relations/public information activities.	*Complete the following courses:* PSYC-479 Advanced Public Relations ..... 2 PSYC-493 Field Practicum in Public Relations Specialization 1-3	Provide evidence of ability to set program goals and objectives and develop program budget.
9. Develop program strategies.	*Complete the following courses:* TCS-103 Communication and Information Technology ..... 3 ENGL-246 Informational Writing ..... 3 PSYC-479 Advanced Public Relations 2	Demonstrate ability to select appropriate audience, messages and media to carry out program goals and objectives through reports from field supervisors.
10. Implement campaigns to influence organizational goals.	*Complete the following courses:* TCS-103 Communication and Information Technology ..... 3 ENGL-246 Informational Writing ..... 3 PSYC-479 Advanced Public Relations 2	Demonstrate ability to accomplish campaigns/programs through reports from field supervisors.
11. Evaluate public relations/public information programs.	*Work on problem-based projects from the following:* PSYC-379 Public Relations ..... 2 PSYC-479 Advanced Public Relations ..... 2 PSYC-XXX Practicum Experience 1-3	Provide evidence of campaign/ program success or failure through examination and evaluation of actual outcomes.

Spanish

Spanish is a practical skill as well as an academic and aesthetic domain The Spanish speaking population of the United States needs to be served through communication about practical needs as well as through cultural appreciation.

The Specialization in Spanish consists of the four communication skills basic to learning another language: listening, speaking, reading and writing, as well as experience in and study of cross-cultural issues, appreciation of a variety of fine arts and literary genres, and practical knowledge of the Spanish language applied to work and other life situations.

The program is suitable for non-traditional students because it builds upon knowledge they may have acquired through personal experience or in the classroom. The recommended activities for this specialization include courses which are ideal for "brushing up," and are designed so that material will be varied when students take the courses more than once. The specialization can be completed in one year, not considering the field experience, if the student has sufficient background in Spanish, so it is a good. credential to combine with a graduate program or to complement a diploma from another university.

Requirements for the Specialization

Intended Outcome	Learning Activity	Evaluation
1. Use general vocabulary to speak Spanish about topics of common or personal interest.	*Complete the following courses:* SPAN-103 Elementary Spanish *or* SPAN-121 and -122 Practical Spanish I and II ..... 4 SPAN-104 Elementary Spanish II ..... 4 SPAN-201 Intermediate Spanish I ..... 4 SPAN-202 Spanish II ..... 4 SPAN-227 Spanish Conversation and Composition ..... 2 SPAN-229 Hispanic Literature in America ..... 2 *or other experience*	Grade of B or better in a Third Year Spanish Course, or credits for speaking on the Brigham Young exam, ACTFL Intermediate Low rating, or other approved test of spoken Spanish.
2. Understand native speakers talking at average speed.	SPAN-227 Spanish Conversation and Composition, or study abroad	Grade of B or better in Spanish 227, or credits for listening on Brigham Young exam, ACTFL Intermediate Low rating, or other approved test of listening comprehension.
3. Write paragraphs to express a personal point of view.	*Complete the following courses:* SPAN-103 Elementary Spanish *or* SPAN-121 and -122 Practical Spanish I and II ..... 4 SPAN-104 Elementary Spanish II ..... 4 SPAN-201 Intermediate Spanish I ..... 4 SPAN-202 Spanish II ..... 4 SPAN-227 Spanish Conversation and Composition ..... 2 SPAN-229 Hispanic Literature in America ..... 2 *or other experience*	Grade of B, or better in SPAN-227 Spanish Conversation and Composition, or in SPAN-229 Hispanic Literature in America, or credits for writing paragraphs on Brigham Young exam or other approved writing test.
4. Read authentic journalistic prose or other reports, understanding the general meaning, coping well with grammatical nuances and complexities, and inferring meanings, for most unfamiliar words.	SPAN-201 Intermediate Spanish I and SPAN-227 Spanish Conversation and Composition, or extensive and careful reading of magazines and newspapers.	Grade of B or better in Spanish 227, other Third Year course based on journalistic prose, or departmental examination.
5.1 Recognize and interpret cultural differences in written material and conversational situations.	SPAN-229 Hispanic Literature in America or other Spanish literature course and cross-cultural readings recommended by department	Grade of B or better in Spanish 229 or departmental examination based on cross-cultural readings and applied to conversational dialogues and literary passages.
6. Interact with ease in professional, social and tourist situations where Spanish is the language of communication.	A minimum of two weeks living experience among native speakers of Spanish.	Participate in a videotaped conversation or interview, in Spanish, fifteen minutes or more, with the collaboration of a native speaker or other appropriate individual.
7. Appreciate the usefulness of Spanish in real life situations.	Personally use Spanish in practical situations, interview about ten people who use Spanish in travel or social or work situations.	Ten page report, in English or Spanish, on how Spanish may be used in various professional or life situations.
8. Be able to use Spanish. in the context of one's chosen profession.	Locate books and other documents in Spanish related. to one's major or future work situation.	Portfolio report — two hundred vocabulary words of a highly specialized nature, with explanations or illustrations as necessary, to be approved by faculty.
9. Read and write personal correspondence in Spanish.	Formal Spanish courses, writing letters to friends and/or family members.	Completion of SPAN-227 Spanish Conversation and Composition with a grade of B or better, or presentation of portfolio of ten letters which the candidate has written to real, or imaginary persons.

Intended Outcome	Learning Activity	Evaluation
10. Recognize the importance of aesthetic values in Hispanic life.	SPAN-229 Hispanic Literature in America or other Hispanic culture course, or research on ten Hispanic composers, artists, and/or authors, in consultation with the faculty.	Grade of B or better in Spanish 229 or other advanced Hispanic culture course, or write an essay based on the results of research, emphasizing aesthetic values and the importance of art in the community.
11. Be familiar with several aesthetic characteristics used in the music, art and literature of Hispanic cultures.	SPAN-201 Intermediate Spanish I and SPAN-229 Hispanic Literature in America, or, listen to Hispanic music, become familiar with examples of Hispanic art and read Hispanic authors, under consultation with faculty.	Completion, with a grade of B or better, of Spanish 201 and 229, or six credits in other courses based primarily on cultural material or presentation, in English or Spanish, of one example each from art, music, and literature, emphasizing unique Hispanic characteristics.
12. Be familiar with some of the most important current, and historicaL events and situations in Spanish-speaking countries.	SPAN-201 Intermediate, Spanish I, or research from a collection of current and historical readings provided by faculty.	Grade of B or better in Spanish 201, or departmental exam based on recommended reading material.
13. Develop strategies for maintaining and improving language proficiency outside the academic setting.	Experience at least three media appropriate to language maintenance, such as Spanish-language movies or newspapers, audio review tapes or computer programs.	Write a reaction paper on your experience with three different media sources, in consultation with faculty.

Training and Human Resource Development

Education is not the sole province of schools. Programs of instruction are conducted by many businesses, industries, in the military, and by other groups and organizations. Planning and providing this instruction is the province of professionals usually identified as "trainers." In our technological society, training programs have become increasingly complex and demands on trainers have increased. Greater expertise on their part is required. This all-university specialization addresses needs for preservice and in-service education for trainers.

This program is intended for students who have expertise in areas such as engineering, technology, education, business, government, military and labor, and who desire to become involved in development and implementation of training programs. Contact the Office of the Dean, College of Technology, Engineering and Management for further information.

Requirements for the Specialization

Note: *Courses numbered 700 and greater are open to graduate students only.*

Intended Outcome	Learning Activity	Evaluation
1. Introduction to concepts of training and human resource development.	TRHRD-360/560 Training Systems in Business and Industry ..... 3 *Select one of the following:* INMGT-400/600 Organizational Leadership *or* PSYC-382/582 Human Resource Management 3	Successful completion of courses at left *(6 credits).*
2. Design and develop training activities.	MEDIA-360/560 Introduction to Media in Education and Training ..... 2 *Complete a course from the appropriate school in curriculum development or course construction (2-3 credits) such as:* EDUC-312/512 Introduction to Curriculum, Methods and Assessment ..... 2 MEBE-401 Marketing Education Curriculum ..... 2-3 VTAE-438/638 Course Construction for Vocational Educators 2	Successful completion of courses at left *(minimum 4 credits).*
3. Implement and facilitate training activities.	*Select one of the following:* EDUC-312/512 Introduction to Curriculum, Methods and Assessment ..... 2 MEBE-301 Marketing Education Methods ..... 3-4 TRHRD-370/570 Training Methods in Business and Industry ..... 2 VTAE-405/605 Methods of Teaching Vocational Education 2	Successful completion of a course at left *(minimum 2 credits).*
4. Evaluate the effectiveness of training activities.	VTAE-440/640 Instructional Evaluation in Vocational Education 2	Successful completion of the course at left *(2 credits).*
5. Apply concepts of training in the professional area.	TRHRD-XXX Co-op/Internship in Training 1-8	Successful completion of the contractual agreement of the internship as evaluated by the business, industry, government or military supervisor, and the UW-Stout supervisor. Completion of a field report is required.

Vocational Evaluation/Rehabilitation Technology

The impact of technology has changed assessment and service delivery in the field of rehabilitation. A philosophical shift to a more empowering stance with persons with disabilities has occurred as a result of the evaluation of their skills and abilities and the enhancement of those skills through assistive technology. This specialization educates and trains vocational rehabilitation professionals and students in skills to meet the needs of people with disabilities, and to provide the services that are being demanded by employers, as well as persons with disabilities for use in the labor market and in accordance with the Americans with Disabilities Act.

Requirements for the Specialization

Intended Outcome	Learning Activity	Evaluation
Development of tool modification and accommodation: demonstrate familiarity with and use of testing accommodations or modifications to facilitate the vocational exploration of persons with disabilities through the modification of tests, work samples, job sites and training materials, as appropriate.	"The Use of Assistive Technology" workshop, resulting in a report detailing the use and modification of testing strategies *or* REHAB-360/560 Assistive Technology 2	Faculty review and approval of report on use and modification of evaluation tools *or* Grade of "C" or better
Communication of rehabilitation plan objectives and recommendations: demonstrate the ability to incorporate the potential of assistive technology to enhance performance potential in the vocational choices of persons with disabilities.	"The Use of Assistive Technology" workshop, resulting in reports that include recommendations for the use of assistive technology *or* REHAB-360/560 Assistive Technology 2	Faculty review and approval of report on use and modification of evaluation tools *or* Grade of "C" or better
Vocational rehabilitation process and philosophy: outline and describe philosophical movements associated with vocational rehabilitation in the United States, describe the role of vocational rehabilitation/assessment in a diverse cultural environment, and describe the need that persons with disabilities have to be a part of society, focusing on strengths and assets that people bring with them to any situation.	Research paper describing process and philosophy *or* Demonstrated work experience of three or more years and professional development credentials *or* REHAB-101 Introduction to Rehabilitation 3	Faculty review and approval of research paper or work experience and professional credentials *or* Grade of "C" or better
Occupational Information: find and use various sources of national, state and local occupational information; link rehabilitation recommendations to the local labor market of the person being served.	Demonstrate work experience as a job developer or placement specialist of two or more years *or* "Job Development and Placement and Occupational Information" workshop resulting in appropriate work recommendations in a written report *or* REHAB-310 Vocational Evaluation *or* REHAB-410 Job Placement 3	Faculty review of work experience or faculty review and approval of report recommendations *or* Grade of "C" or better
Functional aspects of disability: develop knowledge of the functional characteristics of disability and understand the impact of evaluating the skill and abilities of a person with a disability.	Research paper on effect of disabling condition(s) in vocational rehabilitation *or* Test out with faculty-developed standardized test *or* REHAB-230 Psychosocial Aspects of Disability 3	Faculty review and approval of research paper *or* 80 percent or better on the standardized test *or* Grade of "C" or better
Individualized vocational rehabilitation/evaluation planning: identify and delineate the individual needs of a person with a disability; state those needs in a plan for testing skills and abilities in relation to the accomplishment of a task or goal.	"Rehabilitation Planning" workshop resulting in written vocational rehabilitation plan *or* Work experience of two or more years, one letter of reference from a supervisor, three letters of reference from professional referral sources, and five letters of reference from consumers of services *or* REHAB-310 Vocational Evaluation 3	Faculty review and approval of written rehabilitation plan of three separate case studies provided during workshop *or* Faculty review and approval of work experience and letters of reference *or* Grade of "C" or better
Vocational interviewing: demonstrate the development of rapport, provision of agency and assessment information, initial identification of client strengths and limitations through the vocational interview; and create an understanding of the process of vocational rehabilitation through the vocational interview.	"Vocational Interviewing and Facilitating Career Decision Making with Clients" workshop resulting in the videotaping of a vocational interview *or* Demonstrate evidence of past work experience as a vocational counselor for two or more years *or* Complete college level course work in vocational interviewing	Faculty review and approval of videotaped vocational interview *or* Faculty review and approval of work experience *or* Faculty review and approval of college level course work
Vocational report development and communication: interpret, analyze, and synthesize participant data in a coherent and concise manner that addresses needs, strengths, and assets of the participant and develops pertinent recommendations through a report shared orally and in writing with the participant/client and referral source/rehabilitation counselor.	"Vocational Rehabilitation Report Development and Communication" workshop *or* Four written reports addressing needs of four case studies presented during the workshop *or* REHAB-310 Vocational Evaluation 3	Faculty review and approval of the written report options and letters of reference *or* Grade of "C" or better

Intended Outcome	Learning Activity	Evaluation
Standardized testing: become familiar with the procedures for administering and interpreting standardized tests and application of tests to persons with disabilities, understand the impact of the disabling condition and the use of the most appropriate test, and develop a report explaining the impact of testing and using results with a vocational rehabilitation report.	Previous college course work in the use of psychometric testing and principles of validity and reliability *or* "Standardized Testing" workshop and paper describing use of standardized tests with persons with disabilities *or* Past work experience of two years or more where responsibilities include administering and interpreting standardized tests with a supervisor's letter and at least one referral source/rehabilitation counselor *or* REHAB-420/620 Psychological Testing – People with Exceptional Need 3	Faculty review and approval of previous course work *or* Faculty review and approval of workshop paper *or* Faculty review and approval or work experience and letters of recommendation *or* Grade of "C" or better
Job and Training Analysis: perform a job analysis and develop a training analysis on a given job and do a written report; use the job analysis to determine the most appropriate evaluation tools to use with a person with a disability to measure performance ability; determine appropriate training or education to prepare for the job.	Read *A Guide to Job Analysis* or *The Revised Handbook for Analyzing Jobs*, participate in an online discussion of the materials and procedures of job analysis, select a job in the community that reflects occupational choices of agency participants, prepare a job analysis report, select and describe evaluation tools most appropriate for someone interested in the occupation *or* REHAB-410 Job Placement 3	Faculty review and approval of the job and training analysis report and online discussion *or* Grade of "C" or better
Functional Skills: use appropriate tools and strategies to evaluate the functional daily living skills of an individual with a disability, select appropriate method to determine level of functional skill, develop and use situational assessment to establish an understanding of the individual functional skills of a person with a disability.	"Functional Skills Assessment" workshop and report *or* Demonstrate evidence of past work experience of two or more years involving vocational evaluation/ functional skills assessment and/or situational assessment with two letters of reference from referral sources *or* REHAB-470/670 Work Adjustment Services 3	Faculty review and approval of report *or* Faculty review and approval of work experience and letters of reference *or* Grade of "C" or better
Assessment of Learning: demonstrate awareness of learning styles and modalities of teaching through use of selected tests, modify test administration to the demands of the learning/teaching situation.	Previous college-level course work in educational psychology, special education, adult or vocational education that address issues of learning and learning styles and use of learning assessments *or* Paper describing learning styles and assessment of such styles, with assessment tool selection and modification	Faculty review and approval of course work *or* Faculty review and approval of paper
Work samples and work sample systems: demonstrate appropriate use of work samples and work sample systems as means of assessment within a given occupation, demonstrate appropriate use of work samples and systems with different types of disabling conditions.	"Work Sample and Work Sample Systems" workshop and research paper *or* REHAB-310 Vocational Evaluation 3	Faculty review and approval of research paper *or* Grade of "C" or better
Behavioral Observation: observe and note behaviors of individuals during the assessment process as asset or limitation behaviors in relation to the accomplishment of a target goal.	Read appropriate, assigned material and develop a written behavior observation of five clients where observations were critiqued by at least two other professionals, including the referring counselor *or* Demonstrate evidence of work experience in vocational rehabilitation/evaluation where duties included writing and/or noting behavioral observations, with a letter from a supervisor and two from referral sources attesting to accuracy and usability of the written behavioral observations, including examples of written behavioral observations	Faculty review and approval of observations, critiques and reports *or* Faculty review and approval of work experience, letters of reference, and examples of written behavioral observations

Professional Development Certificates

Introduction

UW-Stout offers "professional development certificate" programs in addition to its traditional majors and minors to meet the needs of those who wish to obtain additional knowledge and skills needed for personal growth and professional advancement.

While not a substitute for a degree or diploma, the certificate is an alternative credential for individuals seeking to obtain new knowledge and skills or to update their knowledge and skills in a specific area. Typically, a certificate is earned by completing a set of limited, well defined learning outcomes focused on new or emerging processes or new knowledge and principles applied to practical problems or issues.

These course sets lead to a certificate only. If you're interested in a bachelor's degee, please refer to the degree programs found elsewhere in this bulletin.

Cisco Certified Network Associate Exam Preparation Certificate

The Cisco Certified Network Associate (*CCNA*) Exam Preparation Certificate prepares students to pass examinations through the use of lecture, online curriculum, and laboratory exercises. In order to earn the certificate, students must pass the following courses and professional exams:

TCS-131	Network operating System Fundamentals	2
TCS-141	Networking Fundamentals I	2
TCS-142	Networking Fundamentals II	2
TCS-143	Networking Fundamentals III	2
TCS-144	Networking Fundamentals IV	2
	Exam: Cisco CCNA	

For more information: Steve Schlough, schloughs@uwstout.edu , 715/232-1484

Cisco Certified Design Associate Exam Preparation Certificate

The Cisco Certified Design Associate (*CCDA*) Exam Preparation Certificate prepares students to pass examinations through the use of lecture, online curriculum, and laboratory exercises. 0In order to earn the certificate, students must pass the following courses and professional exams:

TCS-131	Network operating System Fundamentals	2
TCS-141	Networking Fundamentals I	2
TCS-142	Networking Fundamentals II	2
TCS-143	Networking Fundamentals III	2
TCS-144	Networking Fundamentals IV	2
	Exam: Cisco CCNA	
TCS-382/582	Network System Design	3
	Exam: Cisco DCN	

For more information: Steve Schlough, schloughs@uwstout.edu , 715/232-1484

Cisco Certified Network Professional Exam Preparation Certificate

The Cisco Certified Network Professional (*CCNP*) Exam Preparation Certificate prepares students to pass examinations through the use of lecture, online curriculum, and laboratory exercises. In order to earn the certificate, students must pass the following courses and professional exams:

TCS-441/641	Scalable Internetworks	3
	Exam: Cisco Routing	
TCS-442/642	Remote Access Networks	3
	Exam: Cisco Remote Access	
TCS-443/643	Multi-Layer Switched Networks	3
	Exam: Cisco Switching	
TCS-444/644	Internetwork Troubleshooting	3
	Exam: Cisco Support	

For more information: Steve Schlough, schloughs@uwstout.edu , 715/232-1484

Cisco Certified Design Professional Exam Preparation Certificate

The Cisco Certified Design Professional (*CCDP*) Exam Preparation Certificate prepares students to pass examinations through the use of lecture, online curriculum, and laboratory exercises. In order to earn the certificate, students must pass the following courses and professional exams:

TCS-441/641	Scalable Internetworks	3
	Exam: Cisco Routing	
TCS-442/642	Remote Access Networks	3
	Exam: Cisco Remote Access	
TCS-443/643	Multi-Layer Switched Networks	3
	Exam: Cisco Switching	
TCS-445/645	Internetwork Design	3
	Exam: Cisco Design	

For more information: Steve Schlough, schloughs@uwstout.edu , 715/232-1484

Creative Writing

The Creative Writing Certificate provides participants with expertise in areas of effective creative writing to meet a range of written communication and problem solving responsibilities in business, industry, and education. Participants must complete the following courses with a B or better to earn the certificate:

Tier One – Required

ENGL-245 Creative Writing 3
ENGL-XXX Creative Writing II (*under development*) 3

Tier Two – Choice of two courses

ENGL-356 Creative Writing Workshop (*repeatable*):
1) Advanced Fiction Writing
2) Advance Poetry Writing
3) Advanced Creative Nonfiction Writing 6

Tier Three – Choice of one

ENGL-361 Hypertext Writing *or*
ENGL-371 Writing for Multimedia 3

Tier Four – Capstone Seminar

ENGL-4XX The Writer at Work Seminar (*under development*) 2

For more information: Brian Fitch, fitchb@uwstout.edu, 715/232-1485

Gaming Management

The professional development certificate in Gaming Management will provide gaming personnel, graduate and undergraduate students, and international audiences with an understanding of the operational and management aspects of casino gaming while addressing the historical, legal, economic, social, psychological, and tourism impacts that gaming entertainment has on communities and societies.

HT-315/515 Gaming Management 3
HT-316/516 Casino Operations Management 3
HT-317/517 Psychosocial Issues in Gaming 3
HT-418/618 Casino Tourism 3

For information: Sharon Giroux, girouxs@uwstout.edu,715/232-2089

Human Resource Management

The Human Resource Management certificate program provides a broad base of knowledge to professionals seeking to expand their management competencies. The coursework is essential to prepare for the Professional Human Resource (*PHR*) exam, developed by the Society for Human Resource Management (*SHRM*) and recognized nationally as a significant credential for professional advancement in human resources. Competencies required by human resources professionals are best defined by content of the SHRM examination, and they are the same competencies covered in the coursework required for the certificate. The certificate in no way implies or guarantees that the student will pass the exam but should be seen as an important professional accomplishment.

The following courses provide the student with knowledge in all of the tested areas:

PSYC-381/581 Industrial Psychology 2
PSYC-382/582 Human Resource Management 3
PSYC-403/603 Management of Employee Reward Systems 3
PSYC-485/685 Recruitment and Selection of human Resources 3
TRHRD-360/560 Training Systems in Business and Industry 3
ECON-421/621 Collective Bargaining and Labor Relations 2
RC-381/581 Occupational Safety/Loss Control 2-3

For more information: Mitchell Sherman, shermanm@uwstout.edu,715/232-2658

Quality Management

The Quality Management certificate program provides specific and focused content and activities to enable participants to develop competencies and skills commonly required for quality professionals. Completion of the certification program will prepare participants to pursue further credentials in the quality area, including American Society for Quality (*ASQ*) certification tests. Students earn the certificate by completing the following courses with a B- or better in each course:

INMGT-120 Quality Concepts 3
INMGT-320 Quality Tools 3
INMGT-325 Quality Management 3
INMGT-220 Quality Systems-Service Industries *or*
INMGT-420 Quality Assurance Practicum 3-4

For more information: Donna Stewart, stewartd@uwstout.edu, 715/232-1234

AEC Architecture, Engineering and Construction

AEC-130 Hospitality, Living and Institutional Facility Planning (2 cr.)
Basic architectural drafting and design content, concepts, media, techniques, and methods to record and communicate ideas and solve problems.

AEC-131 Architectural Graphics (3 cr.)
Fall and Spring
Architectural drafting with emphasis on drawing theory and delineation. Drawing media and equipment are utilized in solving problems relating to construction that are normally solved graphically. If taken for three credits, computer aided drafting will be included in the course work.

AEC-171 Light Construction Methods and Materials (3 cr.)
Fall and Spring
The building process, terminology, codes, materials, safety requirements, tools, and equipment used in the construction industry with emphasis on residential and small commercial structures.

AEC-172 Construction Technology (3 cr.)
Fal and Spring
Technology of constructing buildings, bridges and other structures, including: site preparation, foundation systems, superstructures, enclosures, utilities, finishing methods, and materials.

AEC-190 Orientation To Construction Industry (1 cr.)
Fall and Spring
An introduction to the field of construction as presented by professionals in the construction industry to broaden student understanding and develop appreciation of the entire scope of construction.

AEC-191 The Built Environment (2 cr.)
TECH
Construction and its relationship to resources, materials, and the culture in which it takes place. Discussion of significant historical and modern structures. Emphasis on how, why, and by whom structures are built and what can be learned from them.

AEC-233 Architectural Design I (3 cr.)
Fall and Spring
Develop graphic simulation techniques and problem-solving abilities; site planning, space requirements, housing codes, structure, light frame construction, solar and earth integrated designs, mechanical and electrical systems. Prerequisites: take AEC-131.

AEC-237 Architectural Technology (3 cr.)
Fall and Spring
Space programming and planning, working drawings for commercial and industrial buildings. Building codes, energy requirements, construction contract documents, structural materials and systems, building materials and systems. Prerequisites: take AEC-131.

AEC-270 Heavy Construction Methods and Equipment (3 cr.)
Fall and Spring
Introduction to commercial and industrial building systems: equipment, site preparations, footings, foundations, formwork, concrete, steel, and wood timber techniques. Prerequisites: take AEC-171.

AEC-273 Concrete and Masonry Technology (3 cr.)
Fall and Spring
Fundamental principles of cement and concrete (ingredients, mixing, placement, finishing, curing, properties, and applications); clay and concrete units (ingredients, properties, manufacture, placement, and application). Prerequisites: take AEC-171; minimum grade C.

AEC-335 Architectural Design II (3 cr.)
Programming and analysis, design solution, presentation and design development drawings for commercial and/or public buildings; scale, site, codes, energy, acoustics, structure and their relation to form.

AEC-357 Site Engineering (3 cr.)
Fall and Spring
Use of surveying instruments, techniques, computations and computer technology used to measure and describe land

configurations; construction surveying including contours, grades, cut and fill, and drainage. Prerequisites: take AEC-131 MATH-121.

AEC-370 Construction Estimating I (3 cr.)
Fall and Spring
Estimating and analyzing material, labor, equipment, methods of construction, overhead and profit, and submitting these factors in the form of a bid. Prerequisites: take AEC-237.

AEC-375 Construction Practicum (2-4 cr.)
Summer
Technical information, construction problems and actual development of light residential structure.

AEC-395 Seminar (1-2 cr.)
Summer
Masonry and procedures necessary for the implementation of masonry education into the school construction curriculum. **R**

AEC-438 Contract Requirements and Specifications (3 cr.)
Fall and Spring
Principles of contract requirements and construction specification organization. Development of basic skills of project manual preparation. Demonstration of role of specifications within the construction process and relationship to other construction contract documents. Prerequisites: take ENGL-320 or ENGL-415.

AEC-452 Environmental Systems -- HVAC (3 cr.)
Fall and Spring
Principles of heating, ventilating and air conditioning; analysis and selection of systems and equipment. Prerequisites: take PHYS-222, PHYS-241, or PHYS-281.

AEC-453 Environmental Systems -- Plumbing and Electrical (3 cr.)
Fall and Spring
Plumbing, electrical and illumination systems for light and heavy construction. Prerequisites: take PHYS-232, PHYS-242, or PHYS-282.

AEC-458 Structural Systems -- Wood and Steel (3 cr.)
Fall and Spring
Analysis, selection, and delineation of wood and steel structural components and systems in buildings. Prerequisites: take PHYS-321.

AEC-459 Structural Systems -- Concrete and Masonry (3 cr.)
Fall and Spring
Analysis, selection, and delineation of concrete and masonry structural components and systems in buildings. Prerequisites: take AEC-458.

AEC-470 Construction Estimating II (2 cr.)
Fall and Spring
Computer-based estimating systems for construction. Take-off, pricing, bid preparation, resource and cost studies, and database operations. Prerequisites: take AEC-370; minimum grade C.

AEC-471 Project Scheduling and Cost Control (3 cr.)
Fall and Spring
Total concept of construction industry: contracting, financing, bidding, planning, organizing, coordinating, and controlling functions and techniques. Prerequisites: take AEC-370; minimum grade C.

AEC-472 Management of Construction (3 cr.)
Fall and Spring
Organizing, managing and operating the contracting firm. Prerequisites: take BUMGT-304.

ANTH Anthropology

ANTH-220 Cultural Anthropology (3 cr.)
SBSCI ANTH ESB GLP Fall, Spring and Summer
Introduction to concepts and methods; variability of culture; outline of cultural elements; processes of cultural change.

ANTH-240 Hmong Studies and Contemporary Life (3 cr.)
ESA GLP Fall, Spring and Summer
Anthropological analysis of the Hmong, including historical and cultural roots in China, migration to Southeast Asia, contributions to the U. S. secret war in Laos during the Vietnam War, resettlement experiences and cultural adaptations to the U. S. as well as contemporary life.

ANTH-250 The Human Past (3 cr.)
SBSCI ANTH Fall and Spring
Biological anthropology: humans as primates, origins of humans, stages of human evolution, and relationship of biology and culture.

ANTH-300 Native Americans (3 cr.)
SBSCI ANTH ESA Fall and Spring
North American Indians: native American cultures prior to European contact, Indian/European historical relationships and contemporary reservation/urban Indian life and issues.

ANTH-350 Low Birker Archeology Field School (4 cr.)
FGLP Summer
Archeology field work for students enrolled in the Low Birker field school in Cumbria, England. Method and theory of archeological excavation; public archeology; relationships between archeological excavation and wider field of archeology, history, and society.

ANTH-420 The Anthropological Study of Family Systems (3 cr.)
Spring
Anthropological, cross-cultural view of family systems, with attention to their organization, functions, dynamics and articulation with other institutions.

ANTH-430 Ojibwe Lifeways (2-4 cr.)
ESA Summer
Indepth, interactive study of Ojibwe culture within a Wisconsin reservation community. **$**

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APRL Apparel Design/Manufacturing

APRL-101 Introduction to Apparel Design/ Manufacturing (1 cr.)
Fall Semester
Apparel industry operations, trends, and careers. Equivalent to 214-101, 214-120.

APRL-140 Textiles (3 cr.)
Fall and Spring Semesters
Selection, use and care of clothing and household fabrics: analysis of their components. Equivalent to APRL-145, 214-145, 214-196A, 214-140.

APRL-145 Interior Decorating/Design Textiles (3 cr.)
Fall and Spring Semesters
Fibers and fabrics used in design/decorating planning of residential and commercial settings. Equivalent to APRL-140, 214-145, 214-196A, 214-140.

APRL-166 Apparel Construction (3 cr.)
Fall and Spring Semesters
Construction theory and principles of fitting applied to garment construction. Recommended: 214-140. Equivalent to 214-266, 214-166.

APRL-174 Apparel Production (3 cr.)
Fall and Spring Semesters
Experience industrial sewing equipment and machinery for a variety of fabrics. Sequence sewn manufacturing operations. Proficiency in apparel construction. Equivalent to 214-174, 214-374.

APRL-180 Pattern Development (3 cr.)
Fall and Spring Semesters
Develop patterns for garments by flat patterning, drafting, and draping methods. constructed. Proficiency in apparel construction. Equivalent to 214-180, 214-280.

APRL-202 Quality Analysis of Sewn Products (3 cr.)
Fall and Spring Semesters
Factors that influence quality levels in manufactured apparel and other sewn products. Equivalent to 214-202. P: APRL-140.

APRL-274 Apparel Manufacturing (3 cr.)
Fall Semester
Processes/functional areas in a sewn product enterprise. Equivalent to 214-274.

APRL-275 Apparel Grading/Marker Making (3 cr.)
Spring Semester
Size grade apparel patterns for various figure types. Make markers and plan cutting of fabric. Equivalent to 214-375, 214-275.

APRL-285 Apparel Line Development (3 cr.)
Spring Semester
Develop and present apparel lines for specific markets.
Equivalent to 214-285, 214-285. P: BURTL-112, BUMKG-330.

APRL-345 Textiles For Interiors (2 cr.)
Spring Semester
Raw materials, fabric structures, specifications, and legislation related to quality, performance, and maintenance of textiles for commercial and household uses. Equivalent to 214-545. P: APRL-140.

APRL-350 Textile Evaluation (3 cr.)
Fall Semester
Problems in fiber identification, fabric performance and care; chemical and microscopic testing procedures; methods for gathering and interpreting data; individual problems. Equivalent to 214-550. P: APRL-140.

APRL-355 Special Topics in Apparel Design and Manufacturing (3 cr.)
Computer use in managing textile and apparel designs. Junior level or higher.

APRL-355 Special Topics in Apparel Design/Manufacturing (1-3 cr.)
Special topics in clothing and textiles. Repeatable for different topics. Junior level or higher. Equivalent to 214-555. **R**

APRL-367 Engineered Tailoring (3 cr.)
Fall Semester
Industrial production methods applied to construction of tailored garments.
Equivalent to 214-568. P: APRL-166.

APRL-368 Experimental Clothing (3 cr.)
Spring Semester
Application of problem-solving techniques in designing and constructing garments using client approach. Equivalent to 214-368. P: BURTL-112, APRL-140.

APRL-381 Functional Clothing Design (3 cr.)
Fall Semester
Application of physical science theory to problems in clothing design: impact protection and thermal balance of the human

body, structural properties of materials, and apparel forms.
Equivalent to 214-581. P: APRL-180.

APRL-382 Advanced Pattern Development (3 cr.)
Fall and Spring Semesters
Develop advanced patterns for garments by draping fabric and using a computer-aided design system. Equivalent to 214-382. P: APRL-180.

APRL-390 Practicum in Textile Design (3 cr.)
Use of textile design techniques as means of artistic expression: stitchery, weaving, knotting, applique and hooking; emphasis on good design and creativity. Equivalent to 214-590. P: ART-101.

APRL-394 Knit Design and Technology (3 cr.)
Fall and Spring Semesters
Stitch formation and patterning of warp and filling knits. Influences on aesthetics and performance of knit fabrics. Design and production of knitted fabric and garments on a flat bed knitting machine, including use of CAD techniques. Equivalent to 214-594. P: APRL-140, APRL-285.

APRL-405 International Study Tour to the Fashion Industry (1-6 cr.)
Spring Semester
Tour of international centers of clothing, textiles, and related arts. Study of the cultural patterns. Program includes lectures by consultants and seminars on the various phases of the fashion and fabric industries. Equivalent to 214-605. **R**

APRL-410 History of Costume - Ancient To European (3 cr.)
Fall Semester
Development of costume throughout the ages: fashion as it reflects past cultures and influences present day costume. Equivalent to 214-610.

APRL-411 History of Fashion - 19th Century to Present (3 cr.)
Spring Semester
A study of the evolution of fashion from the 19th century to the present concentrating on the impact of the fashion designer and changing fashion trends. Equivalent to 214-611.

APRL-419 National Study Tour to the Fashion Industry (1 cr.)
Fall and Spring Semesters
Five-day visit to New York or alternate city: study hours, discussions and lectures by leaders in American fashion market. Junior Level or Higher.
Equivalent to BURTL-419, 214-639, 214-619, BUINB-260. **R**

APRL-480 Draping (3 cr.)
Fall Semester
Application of draping principles in design and construction of garments; emphasis on creativity. Equivalent to 214-680.

APRL-485 Apparel Design Studio (3 cr.)
Spring Semester
Creation, development, and formal presentation of original designs using flat pattern and/or draping techniques. Preparation of professional portfolio to include CAD and other illustrative materials representative of individual expertise. Equivalent to 214-685.

APRL-493 Structural Design and Weaving (2 cr.)
Experiences in loom weaving including two and four harness techniques.
Equivalent to 214-693. P: ART-101.

APRL-495 Historic and Contemporary Fabrics (3 cr.)
Fall Semester
Analysis of designs and techniques of decorating historic and contemporary fabrics; contribution of decorative fabrics to enrichment of human experience.
Equivalent to 214-695.

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APSC Applied Science

APSC-201 Applied Science Profession I (1 cr.)
Fall and Spring
Exploration of career areas of interest; examine appropriate interpretations of scientific measurements and experimental design. Sophomore level or higher.

APSC-311 Issues for Science Professionals (3 cr.)
Fall and Spring
Proprietorial, ethical, and legal issues affecting the careers of science professionals. Junior level or higher.
Prerequisites: take PHIL-235.

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ART Art

ART-100 Drawing I (3 cr.)
HUM CRPRF Fall and Spring Semesters
Concentration on the development of visual sensitivity through drawing with various media. Equivalent to 304-100.

ART-101 Fundamentals of Design (3 cr.)
HUM CRPRF Fall and Spring Semesters
Basic two-and three-dimensional design using various media for development of visual sensitivity. Equivalent to 304-101.

ART-102 Introduction to Art and Design (1 cr.)
Fall and Spring Semesters
Introduction to various disciplines and activities in art and design. Not appropriate for general education requirement.
Equivalent to 304-102.

ART-103 Design (3 cr.)
Fall and Spring Semesters
Application of basic design principles using various media for development of visual sensitivity to three-dimensional form.
Equivalent to 304-503. P: ART-101.

ART-145 The Practice of Art (2 cr.)
Summer Session
Introduction to creative concepts, techniques of presentation, practices in studio art, function of criticism, portfolio ingredients and opportunities in the art world. Studio Art or Art Education majors only. Equivalent to 304-145.

ART-200 Drawing II (1-3 cr.)
Fall and Spring Semesters
Continuation of 304-100; exploitation of media for creative and expressive ends. Initial enrollment must be for 3 credits.
Equivalent to 304-500. P: ART-100. R

ART-209 Painting I (3 cr.)
Fall, Spring and Summer
Introduction to character and use of various painting media; work from still life and life with reference to problems of two-dimensional color composition.
Equivalent to 304-509. P: ART-200.

ART-211 Sculpture I (3 cr.)
HUM CRPRF Fall and Spring Semesters

Introduction to sculptural concepts.
Equivalent to 304-511. P: ART-100 ART-101.

ART-213 Ceramics I (3 cr.)
HUM CRPRF Fall, Spring and Summer
Basic design and techniques of ceramic production for artist/potter; forming, firing and surface treatment. Equivalent to 304-513.

ART-215 Art Metal I (3 cr.)
HUM CRPRF Fall, Spring and Summer
Design and construction of jewelry and objects in precious and non-precious materials with relationship to human interaction. Equivalent to 304-515.

ART-217 Printmaking I (3 cr.)
Fall, Spring and Summer
Introduction to the concepts and techniques of printmaking.
Equivalent to 304-517. P: ART-101, ART-200.

ART-256 Art Workshop (1-3 cr.)
Fall, Spring and Summer
Selected art concepts, processes and media will vary to serve special student populations. Credit determined by individual contract.
Equivalent to DES-256, 304-256.

ART-301 Life Drawing I (3 cr.)
Fall and Spring Semesters
Drawing the human figure in action or at rest; problems in figure composition.
Equivalent to 304-501, 304-420. P: ART-200.

ART-401 Life Drawing II (1-3 cr.)
Fall and Spring Semesters
Advanced problems in figure composition and graphic interpretation of the figure. Initial enrollment must be for 3 credits.
Equivalent to 304-502. P: ART-301. R

ART-407 Aesthetics (3 cr.)
Fall and Spring Semesters
Examination of the philosophers of contending theories in art.
Equivalent to 304-607. P: ARTH-223, ARTH-224, ARTH-336 or ARTH-337.

ART-409 Painting II (1-3 cr.)
Fall, Spring and Summer
Advanced work in oil painting; exploitation of medium for creative and expressive ends. Initial enrollment must be for 3 credits.
Equivalent to 304-510. P: ART-209. R

ART-411 Sculpture II (1-3 cr.)
Fall and Spring Semesters
Advanced problems in sculpture; exploitation of media for creative and expressive ends. Initial enrollment must be for 3 credits.
Equivalent to 304-512. P: ART-211. R

ART-413 Ceramics II (1-3 cr.)
Fall, Spring and Summer
Use of clay, glazes and kiln for design and production of high-fired ceramics. Initial enrollment must be for 3 credits.
Equivalent to 304-514. P: take ART-213. R

ART-415 Art Metal II (1-3 cr.)
Fall, Spring and Summer
Advanced problems in design and construction of jewelry, hollow forms and objects in precious and non-precious materials. Initial enrollment must be for 3 credits. Equivalent to 304-516. P: ART-215. R

ART-417 Printmaking II (1-3 cr.)
Fall, Spring and Summer
Advanced work in the processes of relief, silkscreen, etching or lithographic printmaking. Initial enrollment must be for 3

credits.
Equivalent to 304-518. P: ART-217. R

ART-445 Senior Seminar (1 cr.)
Summer Session
Professional practice including portfolio and senior exhibition; current ideas and career opportunities within the art profession. Senior level or higher. Studio Art or Art Education majors only. Equivalent to 304-545.

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ARTED Art Education

ARTED-108 Introduction To Art Education (2 cr.)
Fall
Introduction to the Art education field, responsibilities of art teachers, literature, and current issues in the profession.

ARTED-208 Preteaching Observation (2 cr.)
Fall
Examination of K-12 art teaching methods and practices through on-site observations, discussion and related coursework. Required 30 hours of K-12 art classroom observation. Education majors only; must have completed Benchmark I.
Prerequisites: take ARTED-108.

ARTED-308 K-12 Art Education Theory, Methods, and Practice (4 cr.)
Spring
Theory, methods, and curriculum development in art education including K-12 art teaching practicum in selected elementary and secondary art classrooms. Education majors only; must have completed Benchmark I.

ARTED-408 Student Teaching in Art Education — Elementary (8 cr.)
Fall and Spring
Directed teaching in elementary art; required student teaching seminars, on-line course participation, and completion of portfolio. Education majors only; must have completed Benchmark I.

ARTED-409 Student Teaching in Art Education — Secondary (8 cr.)
Fall and Spring
Directed teaching in secondary art; required student teaching seminars, on-line course participation, and completion of portfolio. Education majors only; must have completed Benchmark I.

ARTED-488 Intern Teaching: Art Education (8-16 cr.)
Fall and Spring
Alternative method of obtaining Art Education student teaching experience. Interns receive license to teach and salaried appointment in a cooperating school for one semester. School of Education permission required.
Prerequisites: take ARTED-208, EDUC-303, EDUC-312, EDUC-326, EDUC-336, EDUC-376, EDUC-382, SPED-430.

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ARTH Art History

ARTH-222 Introduction To Art (3 cr.)
HUM/ARTMU
Fall
Art appreciation and historical survey for the non-art major.

ARTH-223 Survey of Art--Ancient Through Medieval (3 cr.)
HUM/ARTMU
The painting, sculpture, architecture and minor arts in the ancient western world.

ARTH-224 Survey of Art-Renaissance through 20th Century (3 cr.)
HUM/ARTMU
Sculpture, painting, architecture and minor arts of western world from 14th century to present.

ARTH-319 Evolution of Design (3 cr.)
Summer
Examination of basic concepts which influence the evolution of architecture, art and design.
Prerequisites: take ARTH-224 and ENGL-101, or take ARTH-224 and ENGL-111.

ARTH-325 Egyptian and Mesopotamian Art (3 cr.)
The evolution of the arts of ancient Egypt and the Near East.

ARTH-326 Greek and Roman Art (3 cr.)
The arts of ancient Greece and Rome.

ARTH-327 Medieval Art (3 cr.)
The arts of Europe and Byzantium from late Roman Empire to end of Middle Ages.

ARTH-328 Italian Renaissance Art (3 cr.)
Architecture, sculpture and painting of the Italian Renaissance from 14th to 17th century.

ARTH-329 Northern Renaissance Art (3 cr.)
Renaissance art in Northern Europe from 15th to 17th century.

ARTH-330 Northern Baroque Art (3 cr.)
Architecture, painting, sculpture and other art forms of 17th century Northern Europe.

ARTH-331 Southern Baroque Art (3 cr.)
Development of art in Southern Europe from Italian Renaissance to 18th century.

ARTH-332 Women in Art History (3 cr.)
Spring
A survey of the images and the imagery of women in art from prehistoric times to the present.

ARTH-333 Period Furnishings (3 cr.)
Fall
A survey of furniture and furnishings in the western world.

ARTH-334 American Art (3 cr.)
Development of visual arts in the United States from colonial period to 1950.

ARTH-335 19th Century Art in Europe (3 cr.)
History of European art from about 1800 to 1900.

ARTH-336 Modern Art (3 cr.)
Fall
The main currents and developments in art from Monet and Cezzane to 1950.

ARTH-337 Art Since 1950 (3 cr.)
Developments in painting and sculpture in Europe and America since 1950. Prerequisites: take ARTH-224.

ARTH-338 Asian Art (3 cr.)
Art from prehistoric times to 19th century in China, Japan and their spheres of influence.

BIO Biology

BIO-101 Introductory Biology (4 cr.)
NSCI LFSC LAB Fall, Spring and Summer
Introduction to the science of biology including life processes, cell biology, genetics, molecular biology, evolution, ecology, plant and animal diversity. Life systems are viewed from the sub-cellular to the community level, emphasizing the diversity, functioning, and interaction of whole organisms.

BIO-111 Science, Society, and the Environment (4 cr.)
NSCI LFSC LAB GLP Fall, Spring and Summer
Relationship of humans to the natural environment. Ecological principles in relation to contemporary problems such as resource utilization, species extinction, human population dynamics, waste, and pollution generation and control.

BIO-122 Introductory Biology (3 cr.)
NSCI LFSC LAB Fall, Spring and Summer
Principles of biology: cellular metabolism, heredity and relationships between living organisms and their environments, with laboratory.

BIO-125 Biology of Aging (3 cr.)
NSCI LFSC Spring
Understanding the aging process. Physiological, demographic, immunological and overall health aspects of aging.

BIO-128 Community Health (2 cr.)
HPE HLTH Fall, Spring and Summer
Disease prevention through education, sanitation, isolation and immunization; public health programs and operation of federal and state laws.

BIO-130 Human Sexual Biology (3 cr.)
NSCI LFSC Fall and Spring
Male and female differentiation, development, structure, function and diseases of the reproductive system. Sperm and ovum production, fertility control, pregnancy, birth and lactation, mechanisms and patterns of inheritance.

BIO-132 Human Biology (4 cr.)
NSCI LFSC LAB Fall, Spring and Summer
Basic concepts of physiological processes and anatomy of all organ systems of humans, based on dissection of a cat; embryological development.

BIO-135 College Molecular Cell Biology I (5 cr.)
Fall
Introduction to the biological sciences, including cell biology, physiology, and molecular biology. Emphasis on scientific thought processes, laboratory skills, and communication skills. For Applied Science majors and Biology minors.

BIO-136 Organismal Biology (4 cr.)
Spring
Introduction to the biological sciences, including evolution, an overview of life's diversity, plant biology, animal biology, and ecology. Emphasis on scientific thought processes, laboratory skills, and communication skills. Prerequisite: take BIO-135.

BIO-150 Environmental Science (2 cr.)
NSCI LFSC GLP Fall, Spring and Summer
The relationship of humans to the natural environment. Study of ecological principles in relation to contemporary problems such as resource utilization, human population dynamics, waste and pollution control.

BIO-206 Food Service and Environmental Sanitation (1 cr.)
Fall and Spring
Microbial problems in food service industry: sanitation, storage, handling, distribution, serving, personnel, equipment and facilities.

BIO-210 Concepts and Issues in Biotechnology (2 cr.)
NSCI LFSC TECH GLP Fall and Spring
Concepts and issues in the field of Biotechnology. Overview of stem cell research, cloning, tissue engineering, artificial organs, genetically modified foods, and others as appropriate.

BIO-220 Physiology of Disabilities (3 cr.)
Fall and Spring
Causes, consequences, prognoses and treatments of diseases and injuries common in today's society. Includes genetic disorders, birth defects, cancers, degenerative disorders, spinal cord injuries, cardiovascular abnormalities and immune disorders. Prerequisite: take BIO-132 or BIO-134.

BIO-234 Physiology and Anatomy (4 cr.)
NSCI LFSC LAB Fall and Spring
The structure and function of the human organism at the cellular, organ, and organism levels with emphasis on the physiological control systems and the concept of homeostasis as the unifying concept in physiology. Prerequisites: take BIO-101, CHEM-125 or CHEM-135.

BIO-242 Botany (4 cr.)
NSCI LFSC LAB Fall and Spring
Introduction to structure and function of plants, survey of plant kingdom, and structure and life history of representative forms of plant life.

BIO-252 Zoology (4 cr.)
NSCI LFSC LAB Fall and Spring
Investigation of vertebrate and invertebrate animal life. Diversity, physiology and adaptation of the animal species.

BIO-255 The Biology of Fly Fishing (2 cr.)
NSCI LFSC Spring
The science and art of fly fishing. Research aquatic environments and ecosystem dynamics to understand the relationship between fish and the world around them. Gain exposure to aquatic ecology, fish and insect identification and behavior, and fly tying.

BIO-306 General Microbiology (4 cr.)
Fall and Spring
Introduction to microbial life forms including Archaea, Bacteria, and Eukarya. Survey of microbial cell biology, physiology, molecular biology, ecology, and pathogenesis. Bacteriological and molecular methods used to identify microorganisms in natural and artificial environments. Prerequisite: take 1 group (take BIO-101/take 1 course from subject CHEM).

BIO-332 Genetics (3 cr.)
NSCI LFSC LAB Fall and Spring
Fundamental principles of genetics, from Mendel to the present; applications to plants, animals and humans. Laboratory reinforces principles studied in lecture and includes performance of genetic crosses, the cell, mitosis/meiosis, use of mathematical tools to analyze data, gene mapping, karyotyping, pedigree analysis, and the concepts of transformation/transduction. Prerequisite: take BIO-101.

BIO-350 Ecology (3 cr.)
NSCI LFSC LAB Fall and Spring
Interrelationships of organisms with their abiotic and biotic environments. Corequisite course: BIO-101.

BIO-358 Introductory Pharmacology (2 cr.)
Odd Years -- Fall
Discussion of the sites and mechanisms of drug action, mechanisms of drug distribution, biotransformation and elimination. Analgesics and psychoactive drugs, drugs used clinically to impact cardiovascular care and to manipulate the reproductive system. Prerequisite: take BIO-132, BIO-234 or CHEM-135.

BIO-360 Introduction to Neuroscience (3 cr.)
Even Years -- Fall
Investigation of the human nervous system at the molecular, cellular and system level. Organization and function of neuronal cells, sensory receptors, sensory and motor pathways and integration centers. Introduction to electro-physiology, biochemistry of neurotransmitters and receptors, neuropharmacology, development of the nervous system, and consequences of neuronal disease and trauma. Prerequisite: take BIO-132 or BIO-234.

BIO-361 Psychobiology (2 cr.)
Spring

Biological basis of human and animal behavior: evolution of physiological and behavioral adaptations of organisms to their environment.

BIO-362 Advanced Physiology (3 cr.)
Fall and Spring
Human physiology with emphasis on integration of the nervous, muscular, cardiovascular, immune, renal, respiratory, digestive and endocrine systems. Cellular and molecular processes are studied. Computer simulations and experiments in frog physiology will be utilized. Prerequisite: take BIO-234.

BIO-370 Biotechnology (3 cr.)
Theoretical and laboratory experience in recombinant DNA techniques and their applications in the biotechnology industry. High School Biology/Chemistry or equivalent required.
Prerequisites: take CHEM-201.

BIO-406 Food Microbiology (3 cr.)
Fall and Spring
Methods of food preservation, their effectiveness and related food spoilage by microorganisms. Quality control techniques used to determine presence of specific groups of economically important microorganisms. Prerequisite: take BIO-306.

BIO-489 Advanced Biology Experience (1-4 cr.)
Experiences leading to deeper understanding of biological principles. Junior level or higher. **R**

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BUACT Business Accounting

BUACT-200 Financial-Managerial Accounting – Engineering Technology (2 cr.)
Fall and Spring
Survey of financial accounting concepts for a sole proprietorship, partnership, and corporation. Managerial accounting concepts will be covered in use of the annual report, with emphasis on financial statement analysis.

BUACT-201 Financial-Managerial Accounting (3 cr.)
Fall and Spring
Survey of financial accounting concepts for a sole proprietorship, partnership and corporation. Managerial accounting concepts will be covered in the use of the annual report, with emphasis on financial statement analysis including the cash flow statement and budgets. For Engineering Technology and Industrial Management majors only.

BUACT-206 Introduction to Financial Accounting (3 cr.)
Fall, Spring and Summer
Theory of debit and credit, principles of accounting records, modern business papers, working sheets, balance sheets and income statements, and sole proprietorships. Sophomore level or higher.

BUACT-207 Introduction - Corporate and Managerial Accounting (3 cr.)
Fall, Spring and Summer
Development of basic accounting theory from BUACT-206: partnership and corporate forms of organization; branch and manufacturing accounting; cost accounting, budgeting and analysis and interpretation of financial statements.
Prerequisites: take BUACT-206.

BUACT-312 Cost Accounting (3 cr.)
Fall and Spring
Emphasis on concepts and techniques of cost analysis. Application of cost information and discussion of techniques and budgeting. Equivalent to BUACT-410. Prerequisites: take BUACT-206.

BUACT-320 Income Tax Accounting (3 cr.)
Fall and Spring
General concepts of U.S. tax law and its effect on individual, partnership, and corporate decisions; computation of federal and state taxes for individuals. Prerequisites: take BUACT-206.

BUACT-335 Accounting for Management Decisions (3 cr.)
Fall and Spring
Interpretation of financial statements, internal control, budgeting, costing of products manufactured and sold, analysis of cost-volume- profit decisions. Data presented without mechanical techniques. Prerequisites: take BUACT-207.

BUACT-340 Business Finance (3 cr.)
Fall, Spring and Summer
Concepts of raising, allocating and controlling capital for business entities; analysis of the income tax system and its relevance with business decisions; analysis of financial data in making investment decisions. Prerequisites: take BUACT-207 and STAT-130 and MATH-123.

BUACT-346 Seminar (1-3 cr.)
Current topics in business. (Title will reflect specific business content.) **R**

BUACT-410 Manufacturing Cost Analysis (3 cr.)
Fall and Spring
Emphasis on concepts and techniques of cost analysis. Application of cost information and discussion of techniques and budgeting for a manufacturer. Equivalent to BUACT-312. Prerequisites: take BUACT-206 or BUACT-201.

BUACT-498 Business Accounting Field Experience (1-2 cr.)
Off-campus work and study in an approved position to better understand the challenges of being an effective manager. **R**

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BUINB Business International Business

BUINB-260 Introduction to International Business (3 cr.)
GLP Fall and Spring
Introduction to the interaction of foreign business, politics, culture, societies on basic international business systems. Basic terminology of International Business is of primary importance. Sophomore level or higher.

BUINB-338 International Logistics (3 cr.)
Spring
International logistics strategy: customer service, inventory, transportation, packaging, warehousing, storage, exporting, licensure, joint ventures, ownership documentation, terms of trading, organization, financial and management skills. Prerequisites: take BUMKG-438

BUINB-367 International Management (3 cr.)
GLP
Theory and practice of managing international organizations, including socio-cultural aspects and group dynamics of international businesses and service organizations. Prerequisites: take BUMGT-304.

BUINB-485 International Marketing (3 cr.)
GLP Fall and Spring
Principles and policies of marketing goods and services in international markets. Concepts, strategies and policies of world trade and multinational firms. Prerequisites: take BUMKG-330.

BUINB-488 International Business Practicum (3 cr.)
Fall and Spring
Assist an actual business in developing their international marketing plan. Students, under the supervision of a faculty member, determine a product's foreign marketability. Prerequisites: take BUINB-485.

BUINB-489 International Business Policies (3 cr.)
GLP Fall and Spring
Students develop the ability to solve business problems in the international arena using a scientific approach to decision making by studying business cases on international policy formulation and administration, manufacturing, marketing, finance, accounting, personnel and public relations functions. Senior level or higher. Prerequisites: Take one course from BUINB, take BUMGT-304, BUMKG-330 or BUACT-340, and take ECON-210 or ECON-201.

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BULGL Business Legal

BULGL-318 Business Law I (3 cr.)
Fall, Spring and Summer
Introduction to the nature of law, the legal system and the judicial process; also includes contracts, sales of goods and agency. Junior level or higher.

BULGL-319 Business Law II (3 cr.)
A continuation of Business Law I; includes property, secured transactions, bankruptcy, estates, commercial paper, partnerships, and corporations. Prerequisites: take BULGL-318.

BULGL-346 Seminar (1-3 cr.)
Current topics in business. (Title will reflect specific business content.) **R**

BULGL-355 Principles of Risk Management (3 cr.)
Fall and Spring
An overview of the role of management of risks in business with emphasis on identification of risks and evaluation to determine methods of handling them. We will consider all methods with
emphasis on insurance. Junior level or higher.

BULGL-365 Principles of Real Estate (2 cr.)
Fall and Spring
Overview of transactions in real estate, examination of the law as it relates to nature of real property, interests in real property, acquiring ownership, brokerage, real estate sales contracts, financing, land use control, and leasing and property management.

BULGL-401 Legal Environment of Business (2 cr.)
Fall and Spring
Changing relationship of government and industry: regulatory legislation, administrative agencies, national policies and social control.

BULGL-473 Legal Aspects of Construction (3 cr.)
Fall
Analysis of contracts and documents used in building construction industry: rights of the parties. Labor relations: law and labor, legality of strikes, legality of picketing and boycott as economic pressure, unfair labor practices, employer and union, rights and responsibilities of supervisor and worker.

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BUMGT Business Management

BUMGT-100 Introduction to Business Administration (1 cr.)
Fall and Spring
Basic business systems processes, their interrelationships and role of business environment. Business Administration Program: advisement, course sequence and job opportunities. General Business Administration majors only.

BUMGT-115 Understanding Business (2 cr.)
Concepts, functions, and interrelationships of various subdivisions of service and production organizations. Equivalent to BUMGT-116.

BUMGT-116 Fundamentals of Business (3 cr.)
Summer
Fundamental exploration of contemporary business practices. Emphasis on case studies and computer simulations related to external business conditions impacting the organization.
Equivalent to BUMGT-115.

BUMGT-304 Principles of Management (3 cr.)
Fall, Spring and Summer
Basic managerial functions: planning, organizing, staffing, directing and controlling; management principles with universal applications; nature of authority and responsibility, departmentation, line and staff relations; enterprise manager in the social setting, comparative management; and management and the future.

BUMGT-346 Seminar (1-3 cr.)
Fall, Spring and Summer
Current topics in business. (Title will reflect specific business content.) **R**

BUMGT-398 Business Administration Field Experience (1-2 cr.)
Fall, Spring and Summer
Off-campus work and study in an approved position to better understand the challenges of being an effective manager. **R**

BUMGT-480 Entrepreneurship: Small Business Planning (3 cr.)
Fall and Spring
Concepts, strategies, and applications involved in entrepreneurship. Profile of entrepreneurs and the risks and rewards, creating products and services for the market place, going into business --start-up, buy out, franchise— legal and financial aspects. Preparing a business plan required.
Prerequisites: take BUMKG-330, BUACT-206 or BUACT-200.

BUMGT-489 Business and Industrial Internship(1-8 cr.)
Fall, Spring and Summer
Off-campus work and study in student's area of concentration; approved salaried position with cooperating company for a semester or summer session. Junior level or higher. **R**

BUMGT-490 Strategic Management and Business Policy (3 cr.)
Fall and Spring
Integrates previous business studies, develops ability to solve business problems through scientific approaches to decision-making. Students use business cases on policy formulation and administration: manufacturing, marketing, finance, accounting, personnel, and public relations functions. Senior level or higher. Prerequisites: Take BUMKG-330 and ACT-340, and take ECON-210 or ECON-201.

BUMGT-498 Business Administration Field Experience (1-2 cr.)
Fall, Spring and Summer
Off-campus work and study in an approved position to better understand the challenges of being an effective manager. **R**

BUMIS Business Management Information Systems

BUMIS-333 Management Information Systems - Decision Support Systems (3 cr.)
Fall, Spring and Summer
Improving the practice of business management through utilization of computer software based management information systems (MIS). Employs spreadsheet software as an aid to management in making, implementing and controlling decisions. Prerequisites: take BUACT-206.

BUMIS-346 Seminar (1-3 cr.)
Current topics in business. (Title will reflect specific business content.) **R**

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BUMKG Business Marketing

BUMKG-308 Marketing for Non-Profit Organizations (2 cr.)
WinTerM
Strategic marketing planning process, marketing audit, marketing strategy development, positioning concept, market research, marketing mix, communication strategies and ethical issues for non-profit organizations. Sophomore level or higher. Equivalent to BUMKG-346.

BUMKG-330 Principles of Marketing (3 cr.)
Fall, Spring and Summer
Retail, wholesale, advertising, channels of distribution, cooperative marketing, pricing, marketing research and marketing legislation from consumer's, middleman's and manufacturer's standpoint.

BUMKG-334 Salesmanship and Sales Management (3 cr.)
Fall, Spring and Summer
Concepts of selling: locating prospects, securing and conducting sales presentations, analyzing and handling different types of customers, closing sale, maintaining goodwill. Sales organizations: recruitment, selection, training compensation and cost control methods. Prerequisites: take BUMKG-330.

BUMKG-337 Purchasing and Supply Chain Management (3 cr.)
Fall and Spring
Process used in purchasing goods and services; procurement process; management of supplier relationships; roles of quality, economics, and legal aspects of purchasing. Prerequisites: take
BUMKG-330.

BUMKG-346 Seminar (1-3 cr.)
Current topics in business marketing. (Title will reflect specific content.) **R**

BUMKG-350 E-Business Strategy and Practice (3 cr.)
Fall and Spring
Development and growth of Internet marketing. An examination of e-business basics, business models, current and future trends, major issues, evaluation of model design and Internet marketing plans. Sophomore level or higher.

BUMKG-370 Principles of Advertising (3 cr.)
Fall and Spring
Psychological, social and economic aspects of advertising in relationship to other aspects of distribution and its place in modern business. Prerequisites: take BUMKG-330.

BUMKG-436 Marketing Management (3 cr.)
Fall and Spring
Examination of the marketing place with emphasis on unique characteristics of the marketing environment. Special emphasis on case study analysis and discussion. Advanced marketing course required. Prerequisites: take BUMKG-330 and BUACT-207.

BUMKG-438 Principles of Logistics (3 cr.)
Fall and Spring
Applies systems approach to plan movement and storage of raw materials, components and finished goods from point of origin to point of consumption. Focuses on transportation and warehousing decisions, channel structures, physical distribution, materials management, and supply chain concepts. Prerequisites: take BUMKG-330.

BUMKG-439 Industrial Distribution Seminar (2 cr.)
Spring
Culminating and synthesizing experiences in industrial distribution. Individual topics will vary from semester to semester reflecting the latest changes in the field.

BUMKG-479 Marketing Research (3 cr.)
Fall and Spring
Experimental and survey techniques to secure information for successful marketing; primary and secondary sources; data collection, compilation and analysis methods; effective communication of conclusions and recommendations to management. Prerequisites: Take BUMKG-330; and take STAT-130, STAT-320, STAT-331, or ECON-325.

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BURTL Business Retail

BURTL-105 Introduction to Retail Merchandising and Management (1 cr.)
Fall
Exploration of origin, structure and trends in retail business. Includes industry expectations, career opportunities, curriculum and other requirements, and industry periodicals.

BURTL-109 Introduction to Interior Decorating (3 cr.)
Fall
Identification and application of design elements and principles as they relate to interior decorating. Identification of the professional role of the interior decorator.

BURTL-127 Basic Merchandising (3 cr.)
Fall and Spring
Analyzing the retailing process, the environment within which it operates, and the institutions and functions that are performed. A foundation for students who plan to work in retailing or related disciplines. Equivalent to BURTL-227.

BURTL-212 Trend Tracking and Forecasting (3 cr.)
Fall
Tracking and forecasting of product and consumer trends based on product lifecycle trends, fashion theories, socioeconomic and cultural factors, lifestyles, psychographic and demographic
trends in the marketplace. Equivalent to BURTL-112.

BURTL-222 Computer Applications (2 cr.)
Microcomputer applications. Analysis of appropriate data bases. Evaluation of software. Hardware selection criteria appropriate to applications. Comparison of mainframe and microcomputer appropriate applications. Prediction of future applications. Repeatable for various subunits. Equivalent to CHD-325.

BURTL-229 Visual Merchandising (3 cr.)
Spring
Specialized study and application of merchandise/ product presentation techniques for individual displays and store designs. Interpreting basic design elements and principles for display; selecting and using of appropriate tools, fixtures, and materials; coordinating visual presentations and other promotional activities to achieve marketing objectives.

BURTL-319 International Economic Trends in Textiles and Clothing (3 cr.)
GLP Fall and Spring
Economic importance of the textile and apparel industries in the United States and the world.
Prerequisites: take APRL-140 and ECON-210.

BURTL-322 Merchandising and Marketing an Apparel Line (2 cr.)
Spring
Merchandising and marketing of product lines from manufacturer to retailer to consumer. Prerequisites: take BURTL-227.

BURTL-327 Store Management (3 cr.)
Fall and Spring
Develop management skills for retail stores of varying size. Senior level or higher. Equivalent to 214-527. Prerequisites: take BURTL-430.

BURTL-329 Fashion Merchandising Promotion (3 cr.)
Fall

Application of fashion merchandising promotion procedures: display, oral and written promotional communication, and publicity. Prerequisites: take BURTL-227.

BURTL-330 Home Furnishings Merchandising (2 cr.)
Spring
Home furnishings merchandised by primary types of retail outlets. Prerequisites: take BURTL-227.

BURTL-335 Special Topics in Retail Merchandising and Management (1-3 cr.)
Fall, Spring and Summer **R**

BURTL-350 Marketing to Aging and Minority Consumers (2 cr.)
Fall
Identify product and service needs of Native, African, Asian and Hispanic Americans, and aging consumers. Interpret demographic, psychological and cultural data of these special populations and develop merchandising strategies. Prerequisites: take BUMKG-330.

BURTL-398 Field Experience (1-2 cr.)
Off-campus work and study in approved position to better understand challenges and potentials of various careers in merchandising and clothing and textile industries. Equivalent to APRL-398 **R**.

BURTL-409 Interior Decorating Studio (3 cr.)
Spring
Analysis and application of decorating trends. Development of resource file of interior decorating trends and application of interior decorating concepts to specific client needs. Senior level or higher. Prerequisites: take DES-304.

BURTL-417 Social/Psychological Aspects of Clothing (3 cr.)
GLP Fall and Spring
Social and psychological influence of dress on individual and group behavior patterns.

BURTL-419 National Study Tour to Fashion Industry (1 cr.)
Fall and Spring
Five-day visit to New York or alternate city: study hours, discussions and lectures by leaders in American fashion market. Junior Level or Higher. Equivalent to APRL-419, BUINB-260. **R**

BURTL-425 Current Retail Strategies for a Differential Advantage (2 cr.)
Fall and Spring
Comparative analysis of specific retail corporations' strategies to gain a differential advantage with their merchandising and operational methodology. Prerequisites: take BURTL-127 and BUMKG-438.

BURTL-426 Fashion Retailing Practicum (4 cr.)
Fall, Spring and Summer
Observation and structured experience in merchandising procedures dealing with complete operations and management of retail establishment. Prerequisites: take BURTL-329 and BURTL-430.

BURTL-430 Merchandise Planning and Control (4 cr.)
Fall and Spring
Techniques of merchandising fashion departments: budgeting, assortment planning, managing inventory; buying for resale. GE MATH must be completed. Prerequisites: take BUACT-206.

BURTL-431 Service Management Strategies (3 cr.)
Fall and Spring
Analysis of modes of service. Planning strategies leading to quality implementation, utilizing extensive case studies.

BURTL-477 Study Abroad - American Fashion College (16 cr.)
Fall
A program for selected students which offers an opportunity to study at the American Fashion College in London with the opportunity to travel in Europe. 2.5 GPA in Professional Core. Apparel Design and Development or Retail Merchandising and Management majors only.

BURTL-490 Advanced Merchandise Planning Control (3 cr.)
Fall and Spring
Application of merchandise theory and techniques to budget, manage, and adjust actual purchases, inventory, and sales of an actual retail business. Prerequisites: take BURTL-430.

BURTL-498 Field Experience (1-2 cr.)
Off-campus work and study in approved position to better understand challenges and potentials of various careers in merchandising and clothing and textile industries. **R**

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CADD CADD/Drafting

CADD-112 Principles of Engineering Drawing 3 cr.
Fall and Spring Semesters
Drafting principles, concepts, and graphic language necessary to communicate technical information on industrial drawings through sketching, traditional drafting (TRAD) and computer (CAD) techniques. Equivalent to 183-112, 183-110, 130-110, 183-112.

CADD-113 Principles of Engineering Drawing II 2-3 cr.
Fall and Spring Semesters
An advanced study of drafting principles, concepts and techniques using the graphic language necessary to communicate with manufacturing personnel, floor workers, designers and engineers. Reading, research analysis and graphic solutions using sketches, traditional (TRAD) and computer (CAD) drafting are used. Equivalent to 183-113. P: CADD-112.

CADD-115 Engineering Graphics 5 cr.
Spring Semester
A comprehensive study of drafting principles, practices and use of standards. The content is sequenced so the learner understands the language needed to communicate with designers, engineers, technicians and assemblers in manufacturing industries. Sketching, traditional and CAD drafting techniques will be used to solve problems. Equivalent to 183-115.

CADD-120 Design Drafting 3 cr.
Fall Semester
Design concepts and drafting techniques. Freehand sketching, problem solving, and drafting procedures to communicate the design intent for multiview drawings. Emphasis on spatial visualization, conceptualization, and graphic communication. Equivalent to 183-120.

CADD-212 Descriptive Geometry 3 cr.
Fall Semester
Graphic representation and solution of space problems involving points, lines, planes, intersections, revolutions and vectors.
Equivalent to 130-212, 183-212.

CADD-234 Computer-Assisted Design and Drafting 2 cr.
Fall Semester and Summer Session
PC based CADD; solve problems with the assistance of computer hardware and software. Generate drawings for architectural and mechanical design applications.
Equivalent to 130-234, 183-234. P: CADD-112, AEC-130 or AEC-131.

CADD-395 Seminar 1-2 cr.
Summer Session
Title will reflect specific design, research and development content. Current and projected communication methods, concepts, technologies and innovations in design, research and development. Equivalent to 183-595. **R**

CADD-400 Workshop 1-3 cr.
Fall, Spring and Summer
Special topics in design, research and development, providing hands-on or experiential learning activities. Specific content and title to reflect the topic of the workshop. Equivalent to 183-600. R

CADD-436 Computer Assisted Design Problems 2 cr.
Spring Semester
Advanced CADD applications. Construct three dimensional wireframe drawings. Perform finite element analysis on select components. Customize software for specific applications. Customize software for specific applications. In-depth analysis of CADD applications in mechanical and architectural design. Instructor's consent required. Equivalent to 130-636, 183-636.

CADD-466 3-D Computer Modeling and Rendering 3 cr.
Spring Semester
Development of three-dimensional computer models and computer graphic images. Includes 3-D surface modeling and rendering.
P: CADD-113 or CADD-234.

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CAS College of Arts and Sciences

CAS-201 Edinburgh Experience 1 cr.
Fall and Spring Semesters
Introduction to the city of Edinburgh and the arts of Scotland including music, theater and dance through attendance and critique of events during the Edinburgh Festival. Offered only at the Wisconsin in Scotland (WIS) center. Equivalent to 300-201.

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CHD College of Human Development

CHD-101 Introduction to Human Services 1 cr.
Exploration of the field of human services: careers, purpose, principles, professional skills, clients, and models of delivery. Analysis of suitability for a career in human services.

CHD-325 Computer Applications in Home Economics 2 cr.
Microcomputer applications in home economics. Analysis of appropriate data bases. Evaluation of home economics software. Hardware selection criteria appropriate to home economics applications. Comparison of mainframe and microcomputer appropriate applications. Prediction of future applications. Repeatable for various subunits. Instructor's consent required.
Equivalent to BURTL-222, 100-325, 200-325, 200-325C, 214-222.

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CHEM Chemistry

CHEM-105 Visualizing Chemistry (2 cr.)
NSCI PHYSC Fall, Spring and Summer
Simple demonstrations that illustrate and reinforce understanding of the physical and chemical properties of matter. Description of the underlying chemistry and chemical safety. **$**

CHEM-107 Chemical Science and Technology (2 cr.)
TECH NSCI PHYSC
Developments in chemical sciences and how they provide key materials and principles that are utilized by other sciences, today's technology and culture.

CHEM-115 General Chemistry (5 cr.)
NSCI PHYSC LAB Fall, Spring and Summer
Fundamental principles of chemistry with applications: composition and structure of matter, formation and naming of compounds, mole concept, writing and balancing chemical equations, types of reactions, elementary stoichiometry, bonding, states of matter, equilibrium, solutions, acids and bases. Math proficiency greater than or equal to MATH-110.

CHEM-125 Principles of Chemistry For Health Sciences (5 cr.)
NSCI PHYSC LAB Fall
Principles of chemistry: general, reaction stoichiometry, equilibrium and thermodynamics. Math proficiency greater than or equal to MATH-110.

CHEM-135 College Chemistry I (5 cr.)
NSCI PHYSC LAB Fall and Spring
Principles of inorganic chemistry, properties of important elements and compounds. More rigorous approach and more extensive coverage than in CHEM-115. Normally followed by CHEM-136. Math proficiency greater than or equal to Math-120.

CHEM-136 College Chemistry II (5 cr.)
NSCI PHYSC LAB Fall and Spring
Reactions and properties of common elements and inorganic compounds; oxidation-reduction and solution equilibria; electrochemistry. Lab work in qualitative analysis for common ions.
Prerequisites: take CHEM-135, or MATH-120 and CHEM-125.

CHEM-201 Organic Chemistry I (4 cr.)
Fall and Spring
Chemistry of carbon compounds: naming, bonding, structure, physical characteristics, reactions. Compounds include hydrocarbons, aromatic compounds, alcohols, ethers, aldehydes, ketones, acids, esters, amines, amides, thiols and sulfides. Laboratory exercises on compound characteristics (physical and chemical), compound identification, reactions and reaction types.
Prerequisites: take CHEM-115 with a minimum grade C; or take CHEM-125 with a minimum grade C; or take CHEM-135).

CHEM-204 Organic Chemistry II Lecture (3 cr.)
Spring
Continuation of Organic Chemistry I; organic reactions, organic compound synthesis, reaction to mechanisms and kinetics, transition state theory, thermodynamics; introduction to IR, NMR and UV-visible spectroscopy of organic compounds.
Prerequisite: take CHEM-201.

CHEM-206 Organic Chemistry II Laboratory (1 cr.)
Spring
Systematic identification of organic compounds using chemical, physical, and instrumental methods with option for organic compound synthesis.
Prerequisite: CHEM-201.
Corequisite: CHEM-204.

CHEM-301 Physical Chemistry Lecture (3 cr.)
Fall and Spring
Fundamental physical chemistry; behavior of gases, liquid state, properties of solutions, principles of thermodynamics, thermochemistry. Taken concurrently with CHEM-303.
Prerequisites: take CHEM-115 ; or CHEM-125; or CHEM-135 and MATH-156.

CHEM-303 Physical Chemistry Laboratory (1 cr.)
Lab course to be taken concurrently with CHEM-301. Experimental techniques and apparatus; treatment of experimental data.
Prerequisites: take CHEM-115; or CHEM-125; or CHEM-135 and MATH-156.

CHEM-311 Biochemistry (4 cr.)
Fall and Spring
Fundamental chemistry and metabolism of carbohydrates, lipids and proteins; second- and third-order structure of proteins; chemistry of nucleic acids; nature and dynamics of enzymes and enzyme action; biological oxidations; lab work

in metabolism, chromatography, enzyme action, qualitative and quantitative analytical procedures.
Prerequisites: take BIO-132 and CHEM-201.

CHEM-315 Food Chemistry (3 cr.)
Spring
Organic biochemistry of foods: enzymatic and non-enzymatic changes associated with food preparation and storage (Maillard-Browning reaction), denaturation of protein, changes in color, odor, texture and nutritive value. Techniques for isolation and identification of biochemical constituents of foods.
Prerequisites: take CHEM-115, CHEM-125 or CHEM-135, and CHEM-201.

CHEM-325 Chemistry of Polymers (4 cr.)
Fall
Basic science of polymers. Common industrial polymers and their applications. Relationship of the structure and salient structural features of industrial polymers with their properties and applications.
Prerequisite: take CHEM-135.

CHEM-331 Quantitative Analysis (3 cr.)
Fall
Introduction to the principles of quantitative chemical analysis and training in precision laboratory techniques.
Prerequisites: take CHEM-115, CHEM-125 or CHEM-135, and CHEM-136 or CHEM-201.

CHEM-335 Instrumental Methods of Analysis (3 cr.)
Spring
Application of instrumental methods to chemical analysis: electrochemical, spectrophotometric, chromatographic, and thermal analysis. Techniques for methods development, sample preparation, optimization of operating conditions, and data analysis needed to obtain accurate, reproducible results by means of instrumentation.
Prerequisites: take CHEM-115, CHEM-125 or CHEM-135, CHEM-136 or CHEM-201.

CHEM-341 Chemistry of Materials (4 cr.)
Fall and Spring
Relationship of the chemistry and microstructure of structural materials (metals, polymers and ceramics) to their properties; degradation of those materials, corrosion of metals, polymers and ceramics.
Prerequisites: take CHEM-115, CHEM-125 or CHEM-135.

CHEM-353 Environmental Chemistry (3 cr.)
Fall and Spring
Principles and origins of chemical reactions that lead to ecological imbalance; systems that have contributed to large-scale environmental pollution or are of current importance; chemical technology needed to correct imbalance. Prerequisites: take CHEM-115, CHEM-125 or CHEM-135.

CHEM-412 Advanced Biochemistry (3 cr.)
Fall and Spring
Molecular biology of humans and other organisms; biosynthesis and catabolism, emphasizing enzyme action; chemistry of specific tissues and fluids.
Prerequisites: take CHEM-201, CHEM-311.

CHEM-440 Advanced Materials Laboratory (1-3 cr.)
Fall and Spring
Student-devised laboratory experiments to solve a materials problem provided by the instructor. Instructor's consent required.
Prerequisites: take CHEM-115, CHEM-125 or CHEM-135. **R**

CHEM-452 Environmental Regulations Management (3 cr.)
Fall, Spring and Summer
Laws governing environmental issues. Environmental regulations, applicability of the laws, and resources for interpreting the regulations. Evaluation of environmental research.
Prerequisites: take CHEM-115.

CHEM-470 Chemistry of Materials II (3 cr.)
Fall and Spring
Advanced principles of materials: diffusion, phase transformations, corrosion kinetics and failure analysis.
Prerequisites: take CHEM-301, CHEM-341, and MATH-250 or MATH-255.

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COUN Counseling

COUN-400 Workshop in Counseling 1-3 cr.
Current specialized topics studied through experiential activities.
Equivalent to 439-600. **R**

COUN-405 Introduction To Basic Counseling Skills 3 cr.
Fall and Spring Semesters
Develop basic helping skills including active listening; problem solving, goal setting, and decision-making; conflict resolution; information giving; assertion skills; and making referrals. Applicable when basic counseling is an appropriate helping response and also in any interpersonal relationship, including people with disability and ethnic diversity issues.
Equivalent to COUN-405, 439-405, 413-405.

COUN-447 Assessment and Treatment of Eating Disorders 2 cr.
Description and diagnostic criteria for anorexia nervosa, bulimia nervosa, obesity, and compulsive overeating. Psychological, sociological, and familial influences on the development of the disorders. Assessment instruments, approaches, and treatment considerations.

COUN-494 Counseling Older Persons 2-3 cr.
Spring Semesters
Training service providers in counseling skills and gerontology through discussion, observation and supervised counseling experiences. Equivalent to 439-694, 413-694.

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CS Computer Science

CS-140 Computer Concepts (2 cr.)
Fall, Spring and Summer
Introduction to computing; history of computers, hardware, software and terminology; components and functions of computers; programming concepts and basic applications; running programs written by others; writing programs in basic time-sharing language.

CS-141 Computer Programming – Basic (2 cr.)
ANRSN/MATH
Fall, Spring and Summer
Beginning computer programming using BASIC: input, output, flow of control, arrays, files, and subprograms.

CS-142 Computer Programming For Multimedia 1 (3 cr.)
Fall
Programming and scripting for multimedia authoring including text, graphics, sound, video, animation, graphical user interfaces, and user interaction. Scripting techniques including lists, functions, and even handlers. Multimedia packaging for CD and Web distribution.

CS-143 Computer Programming For Multimedia 2 (3 cr.)
Fall
Multimedia authoring techniques including behavior scripts, internet data access, dynamic sprite operations, and object-oriented scripting. Multimedia web techniques including design principles, site management, text, images, links, frames, sound, video, and cascading style sheets. Scripting techniques such as JavaScript, behaviors, forms, input validation, and applications.
Prerequisites: take CS-142.

CS-144 Computer Science I (3 cr.)
ANRSN/MATH

Problem-solving and algorithm development using a high-level programming language. Computer organization, programming language and programming, elements of programming style, documentation, introduction to structured programming.

CS-145 Computer Science II (3 cr.)
Problem-solving and algorithm development using a high-level language. Structured programming concepts, debugging and esting, string processing, searching and sorting, elementary data structures, recursion and files.
Prerequisites: take CS-144.

CS-241 Assembly Language Programming (3 cr.)
Fall and Spring
Basic concepts in computer systems including computer structure, machine language, assembly languages, addressing techniques, macros, file I/O, program segmentation and linkage.
Prerequisites: take CS-145.

CS-244 Data Structures (4 cr.)
Fall and Spring
Concepts and foundations of data structures and algorithms. Introduction to analysis of algorithms and linear structures, vectors, linked lists, stacks, queues and priority queues. Non-linear data structures such as trees, tree traversals, binary trees, binary search trees and graphs. Advanced sorting and searching techniques. Hashing, heaps.
Prerequisites: take CS-145.

CS-248 Web and Internet Programming (3 cr.)
Fall and Spring
Design and implementation of web and internet software systems using current programming languages, scripting languages, and interface standards. Network programming and client/server applications. Event-driven programming, multi- threading, exception handling, windows programming and multimedia programming. Support for database access via web programs.
Prerequisites: take CS-145.

CS-341 Data Structures (3-4 cr.)
Fall and Spring
Review of set theory, functions and relations; basic concepts of data; lists, strings and arrays; representation of graphs and trees; storage systems and structures; symbol tables and searching techniques; sorting (ordering) techniques.
Prerequisites: take CS-145.

CS-342 Survey of Programming Languages (3 cr.)
Fall and Spring
Programming languages and language design. Comparative study of three modern high level languages and their application strengths for systems programming, embedded computer systems and artificial intelligence.
Prerequisites: take CS-241, CS-341.

CS-343 Mathematical Foundations of Computer Graphics (3 cr.)
Fall, Spring and Summer
Fundamental hardware, software, mathematics, data structures and algorithms for computer graphics.
Prerequisites: take CS-241, CS-341, MATH-158, MATH-275.

CS-345 Image Processing (3 cr.)
Spring
Theory and applications of digital image processing. Mathematical foundations and algorithms for enhancement, restoration, compression, segmentation and reconstruction from projections.
Prerequisites: take MATH-255, MATH-275, CS-341, STAT-332.

CS-346 Simulation Modeling and Analysis (3 cr.)
Fall and Spring
Simulation as a problem-solving technique; models, analysis and languages for simulation; data collection; random variate generation; verification and validation; output analysis; optimization of systems.
Prerequisites: take CS-341, STAT-332.

CS-441 Computer Organization (3 cr.)
Fall
Hierarchical organization of a computer system: CPU, memory, I/O modules. Detailed analysis of the CPU and control unit implementation.
Prerequisites: take CS-241, CS-341.

CS-442 Systems Programming (3 cr.)
Spring
Design, organization and case studies of major systems software: assemblers, loaders, linkers, macro processors, compilers, and operating systems. Relationship between machine architecture and system software.
Prerequisites: take CS-441.

CS-443 Database Systems Manipulation and Design (3 cr.)
Fall and Spring
Conceptual and logical organization of data, data models, data manipulation and data definition languages, and design of databases. Distributed database systems; integrity, constraints, concurrency, security, and query optimization.
Prerequisites: take CS-341.

CS-448 Software Engineering (3 cr.)
Spring and Summer
Software development lifecycle, programming languages and environments, program testing, documentation, software management and organization. Class software development project.
Prerequisites: take CS-341.

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CTE Career and Technical Education

CTE-301 Preservice Workshop for Career and Technical Educators (1 cr.)
Introduction to the basic concepts of teaching courses in Wisconsin career and technical education.

CTE-302 Principles of Career and Technical Education (2 cr.)
Fall, Spring and Summer
Philosophy, organization and administration of career and technical education, nationwide, in Wisconsin and on the local level.

CTE-334 Performance Analysis (3 cr.)
Fall, Spring and Summer
Analysis techniques utilized in curriculum development. Emphasis on task analysis and related procedures. Includes occupational and needs analysis, competency identification, objective writing and information mapping. Integrates task analysis with a total system for developing and revising career and technical education curriculum or job training programs.

CTE-337 Competency-Based Education: Career and Technical (2 cr.)
Fall and Spring
Competencies for career, technical and adult education programs and courses. Development of competency-based education performance indicators in all domains, a competency-based education management system, and basis for competency- based education evaluation.

CTE-346 Seminar (1-3 cr.)
Fall, Spring and Summer
Current topics in career, technical and adult education with application for personnel in the field. Instructor's consent required.

CTE-359 Technology Impacts Occupational Programs (4 cr.)
Summer
Presentation of latest technology in communications, manufacturing, construction, and/or transportation which involve concepts from math, science and computer science. **R**

CTE-360 Cooperative Occupational Education Programs (2 cr.)
Spring and Summer
Philosophy, organization, coordination and teaching techniques or cooperative education programs in the various career and technical areas. Roles, responsibilities and duties of the cooperative teacher coordinator.

CTE-375 Workshop (1-3 cr.)
Fall, Spring and Summer
Special topics providing hands-on or experiential learning activities. Specific content and title to reflect the topic of the workshop. **R**

CTE-405 Methods of Teaching Career and Technical Education (2 cr.)
Fall and Summer
Competency-based and individualized approach to methods of teaching career and technical education.

CTE-408 Student Teaching in Career and Technical Education (4-8 cr.)
Directed teaching and community experiences at off-campus, postsecondary institutions. Consent of Program Director.

CTE-438 Course Construction for Career and Technical Educators (2 cr.)
Fall and Summer
Competency-based and individualized approach to principles of course construction for career and technical educators.

CTE-440 Instructional Evaluation in Career and Technical Education (2 cr.)
Spring and Summer
Competency-based and individualized approach to instructional evaluation for career and technical educators.

CTE-474 Adult Education (2 cr.)
Fall
Philosophy and history of adult education in the United States. Techniques for teaching adults: psychological factors, methods, adult interests and characteristics.

CTE-488 Career and Technical Education Internship (1-8 cr.)
Fall, Spring and Summer
Consent of Program Director.

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DES Design

DES-200 Design Theory and Methods (3 cr.)
Fall and Spring
A study and application of various techniques and theories of design to fundamental design problems.
Prerequisites: take ART-101, ART-103.

DES-205 Presentation Techniques (3 cr.)
Fall and Spring
Experience in the various techniques of visually developing and presenting a design.
Prerequisites: take ART-100.

DES-210 Letter Form Design (3 cr.)
Fall
Design of letterforms, figures, and visual symbols; history and development of type; calligraphy; page composition for various formats and audiences.
Prerequisites: take ART-100, ART-101.

DES-220 Computer Imagery (3 cr.)
Fall, Spring and Summer
Creative use of digital technology: the design of 2D images and illustrations in both hard copy and digital formats, using bitmap, vector, layout programs, and HTML editors.
Corequisite courses: ART-101.

DES-232 Human Body and Form (3 cr.)
Fall and Spring
Utilize existing human factors research methods, anthropometrics, application of data, task assessment and critical fit

issues in relationship to the body as well as conduct original research while practicing industrial design.
Prerequisites: take DES-200, DES-205.

DES-256 Art Workshop (1-3 cr.)
Fall, Spring and Summer
Selected art concepts, processes and media will vary to serve special student populations. Credit determined by individual contract. **R**

DES-303 Interior Design (3 cr.)
Fall and Spring
Design and development of interior spaces with a sensitivity to human interaction, materials, and furnishing.
Prerequisites: take ART-103, DES-205, AEC-131, AEC-233.

DES-304 Interior Design II (3 cr.)
Fall and Spring
Design problems for interior spaces with emphasis on concepts, human interaction, and materials.
Prerequisites: take RD-205 or DES-303.

DES-308 Lighting Design in the Built Environment (3 cr.)
Fall
Exploration of lighting design as it affects aesthetic, color, and environmental perceptions. Ecological, practical, and qualitative aspects of lighting design.
Prerequisites: take DES-303. **$**

DES-310 Graphic Design I (3 cr.)
Fall and Spring
Study and creation of visual images used to inform and/or persuade specific audiences.
Prerequisites: take ART-101 DES-210 or DES-330.

DES-314 Interior Specifications I (3 cr.)
Fall
An introduction to interior design methods, materials, procedures and specifications.

DES-320 Interior Furniture Design (3 cr.)
Fall and Spring
Applied studio projects with structural, material, economic and aesthetic considerations in the design of contemporary furniture.
Prerequisites: take DES-303 or DES-340.

DES-325 Advanced Computer Imagery (3 cr.)
Fall, Spring and Summer
Digital design fo two dimensional, time-based motion, and interaction graphics.
Prerequisites: take CS-142, ART-100, ART-101, DES-220.

DES-330 Industrial Design I (3 cr.)
Fall and Spring
First course in the industrial design sequence providing an overview of design skills in their application to the resolution of product design problems.
Prerequisites: take DES-200, DES-205, or RD-205.

DES-331 Human Interface and Interaction (3 cr.)
Fall
Developing physical and digital interfaces in product design through exploration of user- centered methods of research.
Prerequisites: take DES-232, MFGT-103.

DES-333 Professional Practice in Industrial Design (1 cr.)
Fall and Spring
The role of the professional industrial designer, portfolio development and preparation for a career in industrial design.
Prerequisites: take DES-232.

DES-340 Industrial Design II (3 cr.)
Fall and Spring
Increased understanding of design as applied to the resolution of complex product design.
Prerequisites: take DES-330.

DES-345 Product Form Design (3 cr.)
Fall, Spring and Summer
Exploration of product forms through drawing and model-building techniques.
Prerequisites: take DES-200, DES-205, DES-330, MFGT-103.

DES-360 Graphic Design II (3 cr.)
Fall and Spring
Application of social, business and ethical factors affecting visual communication, while increasing sensitivity and experience in graphic design.
Prerequisites: choose 1 option: take DES-310 and DES-220 or take DES-310 and DES-330.

DES-370 Interface Design (3 cr.)
Fall, Spring and Summer
Design of digital interfaces using visual aesthetics and end-user research methodologies to communicate information and enhance user experience in a variety of digital output forms.
Prerequisites: take CS-143, DES-325, DES-360.

DES-372 3D Modeling and Animation (3 cr.)
Fall and Spring
Basic 3D modeling, rendering, and animation techniques using virtual objects and visual aesthetics to define form and motion.
Prerequisites: take CS-143, DES-325.

DES-373 Digital Characters (3 cr.)
Fall and Spring
Study of 3D modeling and animation of digital characters and "artificial" life forms.
Prerequisites: take DES-372, ART-301.

DES-374 Digital Environments (3 cr.)
Fall and Spring
Study of digital environments with 3D computer graphics and interaction design.
Prerequisites: take DES-372.

DES-377 Interactive Digital Content Design (3 cr.)
Fall and Spring
Exploration of emerging forms of interactive digital content through advanced multimedia design topic(s).
Prerequisites: take DES-370.

DES-380 Signage and Exhibition Design (3 cr.)
Summer
Organization and design of environmental graphics through the production of signage, display, and exhibition support systems.
Prerequisites: take DES-205, DES-360.

DES-381 Advanced Computer Animation (3 cr.)
Fall and Spring
Advanced 3D modeling, rendering and animation techniques where student develop personal aesthetics and character forms.
Prerequisites: take DES-372.

DES-382 Information Design (3 cr.)
Fall and Spring
Envisioning information through the design and production of charts, diagrams, maps, and other hierarchical graphics.
Prerequisites: take DES-360.

DES-384 Advertising Design (3 cr.)
Fall and Spring
Graphic design principles and creative concepts as applied to advertising art.
Prerequisites: take DES-205, DES-360.

DES-385 Interactive Digital Design (3 cr.)
Fall and Spring
Advanced design of digital interfaces and interactive systems focusing on visual aesthetics in a variety of output forms with various electronic devices. Prerequisites: take DES-370.

DES-386 Publication Design (3 cr.)
Fall and Spring
Graphic design principles as applied to the combination and coordination of art and typography with text.
Prerequisites: take DES-360.

DES-388 Typographic Design (3 cr.)
Fall and Spring
Design of grid-based, hierarchical and expressive typographic structures; analysis of historical and theoretical precedents.
Prerequisites: take DES-360.

DES-405 Advanced Presentation Techniques for Designers (3 cr.)
Fall and Spring
Techniques and skills for presentation and communication of visual materials; advanced perspective, mixed-media rendering, transparent watercolor rendering, gouache rendering applied to presentation of product's interiors and exteriors.
Prerequisites: take DES-205.

DES-410 Product and Packaging Graphics (3 cr.)
Design and application of graphics to products, packages, and related display systems.
Prerequisites: take DES-360.

DES-414 Interior Specifications II (3 cr.)
Spring and Summer
Advanced interior design specification and construction documentation, incorporating elements of current professional practice.
Prerequisites: take DES-314.

DES-415 Environmental Interior Design I (3 cr.)
Analysis and application of various office systems as they apply to and are a part of an architectural setting.
Prerequisites: take DES-304.

DES-416 Environmental Interior Design II (4 cr.)
Advanced interior design topics, with extensive projects, including all phases of current interior design professional practice and incorporation into student portfolio.
Prerequisites: take DES-415.

DES-430 Industrial Design III (4 cr.)
Fall and Spring
Advanced design problems chosen by consultation between student and instructor.
Prerequisites: take DES-345, DES-340.

DES-431 System, Environment and Context (3 cr.)
Fall
Advanced industrial design problems researching system design with consideration of contextual and environmental issues.
Prerequisites: take DES-331.

DES-440 Industrial Design IV (4 cr.)
Fall and Spring
Professional level of understanding and skill applied to advanced design problem chosen in consultation between student and instructor. Prerequisites: take DES-430.

DES-451 Interior Design Practicum (3 cr.)
Fall and Spring
Work experience with an interior designer or in design-related field arranged with interior design work experience coordinator. Prerequisites: take DES-303.

DES-456 Advanced Art Workshop(1-3 cr.)
Selected art concepts, processes and media will vary to serve special student populations. For students familiar with workshop approach or advanced in art program. Credit determined by individual contract. **R**

DES-480 Senior Project — Graphic Design (4 cr.)
Exploration of an advanced graphic design topic through an extensive project: research, production specification, and development of a presentation system. Instructor's consent required.
Prerequisites: take 1 option: take DES-360 and DES-380, or take DES-360 and DES-410.

DES-490 Senior Project Multimedia Design (4 cr.)
Fall and Spring
Approved advanced Multimedia topic(s) explored through the completion of professional level project(s), from concept to published digital media. Multimedia Design students only.
Prerequisites: take DES-370 and MEDIA-430; and take DES-384 or DES-385.

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ECE Early Childhood Education

ECE-100 Introduction to Early Childhood Programs (1 cr.)
Fall and Spring
History of early childhood programs for children through age 8, developmentally appropriate practice, current issues, professionalism, employability skills and attitudes, career exploration. Early Childhood majors only. Equivalent to HDFL-100, 212-100.

ECE-303 Developmentally Appropriate Practice: Infants and Toddlers (3 cr.)
Fall
Developmentally appropriate practices for teaching with infants and toddlers in group settings. Contrast of appropriate and inappropriate practices. Emphasis on play, creativity, health
and safety, integrated curriculum, appropriate teaching strategies, assessment, program models, and writing lesson plans for infants and toddlers. Observations required. Equivalent to HDFL-303, 212-303, 212-303A, 212-594. Prerequisites: take HDFS-124.

ECE-307 Developmentally Appropriate Practice: Preschool (4 cr.)
Fall and Spring
Developmentally appropriate teaching practices with preschool children in group settings. Play, creativity, health and safety, integrated curriculum, teaching strategies, assessment, program models and lesson plans. Observations and practicum required. Education Majors: Benchmark I completed. Equivalent to HDFL-307, 212-307. Prerequisites: take HDFS-124.

ECE-309 Developmentally Appropriate Practice: Kindergarten -- Primary (2 cr.)
Fall and Spring
Developmentally appropriate teaching practices in kindergarten through grade 3 in group settings. Play, creativity, health and safety, integrated curriculum, teaching strategies, assessment, program models and lesson plans. Observations required. Education Majors: Benchmark I completed. Equivalent to HDFL-309, 212-309. Prerequisites: take HDFS-124.

ECE-364 Observing and Guiding Children: Early Childhood Classrooms (3 cr.)
Fall and Spring
Essential elements in guiding children in early childhood classrooms. Positive guidance strategies, introduction to early childhood classroom management, effects of guidance on children's social and emotional development, developing an eclectic approach. Power, process, ethics, methods of observing, documenting children's behavior, progress, development. Observation and participation in early childhood classrooms required. Minimum cumulative grade point average 2.75. Education majors must have passed PPST. Prerequisites: take PSYC-110 HDFS-124 ECE-303.

ECE-410 Early Childhood Curriculum: Science (3 cr.)
Fall and Spring
Methods and materials for assessing, planning, implementing and evaluating science curricula for early childhood (birth-grade 3). Emphasis on science process skills while fostering foundational knowledge in all science areas. Education Majors: Benchmark I completed. Equivalent to HDFL-410, 212-410. Prerequisites: take ECE-303 and ECE-307 and ECE-309.

ECE-411 Early Childhood Curriculum: Mathematics (3 cr.)
Fall and Spring
Mathematics curriculum planning for early childhood (birth through 3rd grade), including selection, organization, presentation, and evaluation of appropriate curricula. Education Majors: Benchmark I completed. Equivalent to HDFL-411, 212-411, 212-411. Prerequisites: take ECE-303 and ECE-307.

ECE-412 Early Childhood Curriculum: Social Studies (3 cr.)
Fall and Spring
Methods and materials for assessing, planning, implementing and evaluating social studies curriculum for early childhood

(birth-3rd grade). Education Majors: Benchmark I completed. Equivalent to HDFL-412, 212-412. Prerequisites: take ECE-303 and ECE-307 and ECE-309.

ECE-413 Language Arts and Emergent Reading I: Birth-Kindergarten (3 cr.)
Fall, Spring and Summer
Developmentally appropriate strategies and materials for planning, implementing, and evaluating language arts. Emphasis on developing emergent literacy skills and language arts with children Birth through Kindergarten. Education Majors: Benchmark I completed. Equivalent to HDFL-413, HDFL-433, 212-413, 212-433, 212-443, ECE-433. Prerequisites: take ECE-303.

ECE-414 Early Childhood Clinical Experience: Integrated Curriculum (2 cr.)
Fall and Spring
Development of competencies in planning, teaching, and evaluating the integrated curriculum for the early childhood period. Participation in an early childhood setting required. Education Majors: Benchmark I completed. Equivalent to HDFL-414, 212-414.

ECE-421 Administration of Early Childhood Programs (2 cr.)
Fall
A study of program organization, program design, staffing, licensing, certification, equipment and facilities for operating early childhood education programs. Field trips required. Equivalent to HDFL-421, 212-421A, 212-621A, 212-665.

ECE-426 Advanced Classroom Management and Guidance (3 cr.)
Fall and Spring
Advanced study of managing early childhood classrooms. Management of the physical environment, instructional context, including large and small groups, and social context. Building a classroom community and encouraging collaborative learning. Assessing management of early childhood classrooms. Analysis of classroom management programs. Observation/participation in early childhood classrooms required. Equivalent to HDFL-401, 212-401A, HDFS-401. Prerequisites: take ECE-364.

ECE-427 Child Abuse and Neglect (2 cr.)
Fall
Systemic nature, forms and indicators, and prevention of abuse/neglect. Factors contributing to, and intervention skills in, coping with the effects of abuse/neglect on children and families at risk. Equivalent to HDFL-427, 212-427A, 212-638.

ECE-433 Language Arts/Reading -- Early Childhood Education (3 cr.)
Fall and Spring
Current philosophies, methodology and materials for teaching reading: readiness activities and beginning reading in early childhood. Equivalent to HDFL-413, HDFL-433, 212-413, 212-433,
212-443, ECE-413.

ECE-435 Children, Families, Schools and Communities (3 cr.)
Fall, Spring and Summer
Building family, school, and community partnerships to support children's well being and educational success. Theories and processes used to establish positive home-school-community
relations.

ECE-464 Special Topics in Early Childhood Curriculum(1-3 cr.)
Philosophy and methodology of early childhood education: problems confronting teachers. Equivalent to HDFL-464 **R**

ECE-480 Student Teaching: Infant, Toddler, Preschool (8 cr.)
Fall and Spring
Full-day student teaching in a school setting for one quarter, based on the university calendar, with infants, toddlers, or preschoolers. Includes parent interaction and seminar sessions. Professional program admission required. Equivalent to HDFL-480, 212-480.

ECE-480A Student Teaching in Preschool Programs (4 cr.)
Fall and Spring
Directed teaching and community experience in selected early childhood centers. Equivalent to HDFL-480A, 212-408A.

ECE-480B Student Teaching in Kindergarten (4 cr.)
Fall and Spring
Directed teaching and community experience in selected kindergartens. Equivalent to HDFL-480B, 212-480B, 212-408B.

ECE-488 Intern Teaching (16 cr.)
An alternate method of obtaining student teaching experience. Teacher interns receive license to teach and salaried appointments in cooperating school systems for one full semester. Equivalent to HDFL-488, 212-488.

ECE-492 Student Teaching in Prekindergarten (8 cr.)
Fall, Spring and Summer
Full-day student teaching experience at the prekindergarten level in a preschool setting, together with a weekly one-hour student teaching seminar session. The student teaching experience follows the calendar of the preschool. Not available to students who have taken ECE-480A and/or 212-490. Early Childhood majors only. School of Education permission required. Equivalent to HDFL-492, 212-492. Prerequisites: take HDFL-335 and HDFL-344 and ECE-433.

ECE-493 Student Teaching: Kindergarten (8 cr.)
Fall and Spring
Full-day student teaching in a school setting for one quarter based on the host school's calendar with kindergarten age children. Includes parent interaction and seminar sessions. Professional program admission required. Equivalent to HDFL-493, 212-493.

ECE-494 Student Teaching: Primary (8 cr.)
Fall and Spring
Full-day student teaching in a school setting for one quarter based on the host school's calendar in grade 1, 2 or 3. Includes parent interaction and seminar sessions. Professional program admission required. Equivalent to HDFL-494, 212-494.

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ECON Economics

ECON-201 General Economics 3 cr.
SBSCI ECON Fall and Spring Semesters
Introduction to basic elements of economics; analysis of institutions, issues and policy; theories of price, national income and employment. Not open to students taking ECON-210 and ECON-215. Equivalent to ECON-210, 320-210, 320-201.

ECON-210 Principles of Economics I 3 cr.
SBSCI ECON Fall, Spring and Summer
Tools of basic economic analysis including scarcity, cost, and demand and supply; macroecon- omic issues such as economic growth, inflation, and unemployment; alternative macroeconomic theories; and fiscal and monetary policies. Equivalent to ECON-201, 320-210, 320-201.

ECON-215 Principles of Economics II 3 cr.
SBSCI ECON Fall, Spring and Summer
Theory of individual economic behavior; price determination; market structures; labor, capital and natural resource markets; international economics; and current microeconomic topics. Equivalent to 320-215. P: ECON-210.

ECON-335 Personal Securities Investments 2 cr.
Major aspects of security investments: common and preferred stocks, bonds, mutual funds. Equivalent to 320-335. P: ECON-201 or ECON-210.

ECON-410 Microeconomics 3 cr.
Fall and Spring Semesters
Value and distribution theory; analysis of demand-firm, industry and utility; pricing of production factors. Equivalent to 320-410. P: ECON-215.

ECON-415 Macroeconomics 3 cr.
Fall and Spring Semesters
Determination of aggregate income, employment, growth rates and price levels; monetary and fiscal policies necessary for full employment. Equivalent to 320-415. P: ECON-215.

ECON-420 Labor Economics 3 cr.
Fall, Spring and Summer

Basic labor theory; history of organized labor in western industrial societies; collective bargaining as viewed by labor, management, government and public; institutions involved in modern labor relations. Equivalent to 320-420. P: ECON-201 or ECON-210.

ECON-421 Collective Bargaining and Labor Relations Relations 2 cr.
Fall, Spring and Summer
Introduction to collective bargaining in the U.S.; formation, substance and administration of a labor agreement, current labor law, role of National Labor Relations Board. Equivalent to 320-421. P: ECON-201 or ECON-210.

ECON-435 Money, Banking, Financial Markets 3 cr.
Fall and Spring Semesters
Money and bank credit, modern monetary theories, monetary policy.
Equivalent to 320-435. P: ECON-201 or ECON-210.

ECON-445 Public Finance 3 cr.
Spring Semester
Public finance at all governmental levels; taxation, expenditures, debt management and fiscal policy. Equivalent to 320-445. P: ECON-201 or ECON-210.

ECON-480 International Economics 3 cr.
Fall and Spring Semesters
Survey of current issues such as changing world financial situations, international agreements and organizations, and other topics related to trade models, tariffs, exchange rates and balance of payments. Equivalent to 320-680. P: ECON-210.

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EDUC Education

EDUC-303 Educational Psychology 3 cr.
Introduction to the psychological aspects of the educative processes. Emphasis on application of basic psychological principles to teaching. Focus on learner, learning process, and the teacher as an agent for change. Benchmark I completed. Equivalent to 421-303, 421-303A, 479-303. Prerequisites: take PSYC-110.

EDUC-305 Teaching Practicum 2 cr.
Fall, Spring and Summer
Practical experience in developing the prospective teacher's ability in specific well defined teaching skills. Equivalent to 421-305. Prerequisites: take EDUC-307.

EDUC-307 Applied Human Relations 2 cr.
ESC
Fall, Spring and Summer
An experiential course focusing on major themes affecting human relations. Equivalent to 421-205, 421-507.

EDUC-310 Field Experience - Tutoring 1 cr.
Supervised one-on-one or small group teaching experience in a school or other educational setting in response to the special needs of students with learning difficulties. Emphasis is on precision teaching, individualized instruction, and alternative strategies. Benchmark I completed. Equivalent to 421-310.

EDUC-312 Introduction to Curriculum, Methods, and Assessment 2 cr.
Fall and Spring
Principles and practices of curriculum development, instructional methods, and measures of assessment of learning; including issues of and approaches to curriculum and curriculum development; methods of effective teaching; purposes, methods, and measures of assessment. Minimum Cum GPA 2.75. Educ Mj must have passed PPST. Equivalent to 421-312.

EDUC-326 Foundations of Education 2 cr.
Historical background, status, trends, and organization of U.S. education; understandings vital to students before they begin student teaching. Includes professional roles, expectations, rewards and frustrations, resources, control, finance and philosophy. Equivalent to 421-326.

EDUC-336 Multiculturalism: Issues and Perspectives 2 cr.
ESA
Intensive study of diversity in U.S. schools. Examination of the educational needs of students from various ethnic, cultural, religious, language and social class groups. Discussion of issues related to racism, sexism and oppression. Benchmark I completed. Equivalent to 421-536, 421-536A.

EDUC-376 Field Experience: Cross-Cultural Experience 1 cr.
Supervised one-on-one or small group experience in a school or other setting in response to a special academic or social need with representatives of one or more of the following designated ethnic minority groups--African-Americans, Asian-Americans, Pacific Islander-Americans, American Indians and Hispanic-Americans; and various socio-economic groups, specifically the low-income. Benchmark I completed. Equivalent to 421-576.

EDUC-380 Reading and Language Arts in Elementary Education 3 cr.
Current philosophies in reading and language arts education, the centrality of language arts to the elementary curriculum and methodologies for the elementary classroom. Benchmark I completed. Equivalent to 421-580. Corequisite courses: EDUC-381.

EDUC-381 Preclinical: Elementary Education Language Arts and Reading 1 cr.
Supervised teaching experience in developing the prospective teacher's ability in elementary education language arts and reading skills. Benchmark I completed. Equivalent to 421-581. Corequisite courses: EDUC-380.

EDUC-382 Secondary Reading and Language Development 2 cr.
Effective utilization of reading and language development methodologies in secondary content area classrooms. Benchmark I completed. Equivalent to 421-582. Prerequisites: take EDUC-303.

EDUC-400 Workshop: Special Topics in Education1-3 cr. R

EDUC-415 Classroom Management 2-3 cr.
Technique and theory for motivating Pre-K through grade 12 age students to manage their own behaviors, including preventive discipline, behavior management, classroom environment, classroom climate, effective communication, conflict resolution, and peer mediation. Must be taken concurrently with variety of field experiences. Benchmark I completed.

EDUC-430 Ojibwe Lifeways 2-4 cr.
ESA Summer
Indepth, interactive study of Ojibwe culture within a Wisconsin reservation community. Equivalent to 421-630. **$**

EDUC-495 Personal Learning Experience 2 cr.
An experimental program for juniors and seniors. By permission of program directors. Each student selects an area of life which involves ethical decision and investigates that decision-making process. The group enrolled for this experience meets with the directors twice a week for direction, discussion, and criticism. Self-evaluation paper at the close of the course, which is submitted to the critique of the directors and other members of the learning experience.
Equivalent to 421-495.

ELEC Electricity/Electronics

ELEC-204 Electricity/Electronics Fundamentals 3 cr.
Fall, Spring and Summer
Electricity/electronics, associated phenomena related to basic electrical and electronics systems. Examines devices, operation, application, theory from power devices to electronic devices, controls to microprocessors. Equivalent to 110-204, 184-204. P: MATH-120.

ELEC-260 Electrical Circuits 3 cr.
Fall and Spring Semesters
Concepts and analysis techniques in DC and AC circuit analysis including current, voltage, resistance, capacitance,

inductance, impedance, loop and node equations, transients, network theorems, real, reactive and apparent power in AC circuits. Equivalent to 184-260, 110-270, 184-270, 184-260. P: PHYS-211 MATH-153.

ELEC-271 Digital Logic and Switching 3 cr.
Fall, Spring and Summer
Analysis and synthesis of combinational and sequential switching circuits. Boolean algebra and number systems, switching functions, minimization, single and multiple output networks, realization of functions, programmable logic devices. Finite state sequential machines, state transition diagrams, machines and state equivalence. Algorithmic state machines and asynchronous state machines. Equivalent to 110-473, 184-271, 184-473, 184-271. P: ELEC-260.

ELEC-272 Solid State Electronics 3 cr.
Fall and Spring Semesters
Basic semiconductor theory dealing with signals, operational amplifiers, diodes, bipolar junction and field effect transistor, frequency response, feedback, and circuit analysis. Equivalent to 184-272, 184-371, 110-371.

ELEC-274 Fundamentals of Microprocessors and Microcomputer Systems 3 cr.
Fall and Spring Semesters
Concepts of microprocessors, microcomputer architecture, assembly language programming and peripheral components. Hardware topics include 80 x 86 processors, interrupts, bios, serial and parallel interfaces, video displays, hard drives, CD ROMS, memory devices and local and peripheral buses. Equivalent to 184-274, 184-551, 110-551. P: ELEC-271, CS-144.

ELEC-280 Networks 4 cr.
Networks based on differential equations. Classical and Laplace transform solution of network equations, complex impedance, introduction to state variable theory, two-port parameters. Frequency response techniques including Fourier series and Fourier transforms. Equivalent to 110-280, 184-280.

ELEC-281 Circuit Devices and Logic 3 cr.
Fall and Spring Semesters
DC and AC circuit analysis in transient and steady state conditions. Introduction to computer aided analysis of circuits, devices and logic. Basic digital and analog circuitry including gates, sequential logic and amplifiers. P: MATH-153, PHYS-241.

ELEC-290 Circuits and Devices 4 cr.
Spring Semester
Electrical and electronic circuits and devices. Analysis of circuits containing passive and active components. Analog and digital circuitry including amplifiers and logic gates. Power calculations in alternating current circuits. Electro-mechanical energy conversion including DC and AC machinery. Lab activities include use of base test equipment and the construction of simple electronic circuits. Equivalent to 184-290. P: MATH-154 PHYS-282.

ELEC-340 Motors and Generators 2 cr.
Fall and Spring Semesters
Practical approach to basic operating theory, construction, maintenance of generators, motors, transformers, and machine control. Equivalent to ELEC-348, 110-348, 184-348. P: ELEC-204.

ELEC-342 Computer Applications in Electronics 3 cr.
Microprocessor application at a system level. Use of hardware and software design aids such as assemblers, text editors, compilers, read only memory emulators and system projects related to specific microprocessors. Introduction to the 16-bit microprocessors, 8-bit slice processors, signal processors and controllers. Equivalent to 110-542, 184-542.

ELEC-352 Microcomputer/Microprocessor Concepts 3 cr.
Fall and Spring Semesters
Basic concepts underlying programmable devices. An integrated treatment of microprocessor/microcomputer in both hardware and software. Assembly language programming, peripheral and memory interfacing concepts. P: ELEC-281.

ELEC-353 Instrumentation and Control 3 cr.
Spring Semester
Industrial measurement, control, open loop, closed loop, analog, digital, electric/electronic, fluidic, mechanical, pneumatic. Equivalent to 110-553, 184-553.

ELEC-374 Microprocessor Fundamentals 3 cr.
Overview of present day microprocessor technology. Function, analysis and operation of selected microprocessors. Memory, input-output interfacing devices. Basic machine/assembly and structured language programming and hardware application. Equivalent to 110-574, 184-574.

ELEC-375 Microprocessor Interfacing 3 cr.
Interfacing principles of microprocessor based microcomputer systems. Input-output techniques, input-output mapping, asynchronous-synchronous communication, parallel-serial conversion. Microprocessor application such as control systems, energy monitor, cooking and communications.
Equivalent to 110-575, 184-575.

ELEC-382 Electronic Communications 3 cr.
Fall and Spring Semesters
Electrical/electronic communication systems, modulation, demodulation, R.F. and I.F. amplifiers, alignment, antennas, composite TV signal, receivers, transmitters, spectral representation of signals, amplitude modulation, AM/FM transmitters, side band transmission, AM/FM receivers, and frequency modulation. Equivalent to 184-382, 184-552, 110-552. P: ELEC-272.

ELEC-383 Fundamentals of Control 4 cr.
Analysis of elementary control systems via classical and Laplace transform techniques, frequency response and root locus plots, block diagrams and transfer functions, open and closed loop systems, stability considerations, digital to analog conversion, microprocessor based control systems. Equivalent to 110-583, 184-583. P: ELEC-280 ELEC-374.

ELEC-386 Instrumentation 3 cr.
Descriptive and analysis of thermal, mechanical, acoustic, optical, pneumatic and electronmagnetic sensors, measuring systems, calibration, performance of measuring systems, analog and digital signal conditioning. Measurement of frequency and time, and analysis and performance of display units. Equivalent to 110-586, 184-586.

ELEC-395 Seminar 1-2 cr.
Fall, Spring and Summer
Specific content is designed to upgrade competencies of participants. Content will change to reflect current state of the art in electricity/electronics or power mechanics. Equivalent to ELEC-349, 184-349, 184-595. **R**

ELEC-445 Automation and Control Application 3 cr.
Theoretical and practical concepts behind control system elements and operations. Programmable logic controllers, ladder logic development. Input and output devices, description and interfacing. P: ELEC-352.

ELEC-474 Digital Electronics 3 cr.
Fall, Spring and Summer
Junction and field effect transistors as switches, basic digital and switching circuits, bipolar and Mosfet logic families, digital integrated circuit schemes and building blocks, multivibrators, memory elements, digital to analog and analog to digital converters. Equivalent to 110-474, 184-474.

ELEC-482 Electronic Communication Fundamentals 3 cr.
Investigation of amplitude modulation, frequency modulation, single-side band and pulse modulation electronic communication systems. Theory of modulation and demodulation, noise and a study of transmitter and receiver configurations.
Equivalent to 110-482, 184-482.

ELEC-483 Digital Communication 3 cr.
Fall and Spring Semesters
Theory, practice and design problems. Techniques as applied to digital communication, networking, switching, radio and satellite networks. Equivalent to 184-483. P: ELEC-382, TCS-381.

ENGL English

ENGL-090 Writing Workshop (3 cr.)
This is a remedial writing course that provides individual instruction to meet basic competencies for entry into English 101. Students will write paragraphs and short essays that will prepare them for college-level writing. They will also be given instruction in grammar, usage, punctuation and mechanics. Students must receive a C or better in this course in order to register for English 101. Although this course does not count toward graduation, it is included in the student's course load, fees, and grade point average.

ENGL-101 Freshman English – Composition (3 cr.)
COMSK/WRIT
Fall, Spring and Summer
Principles and practices of writing; documented paper. Placement Test Required.

ENGL-102 Freshman English – Reading and Related Writing (3 cr.)
COMSK/RDG
Fall, Spring and Summer
Readings focused on a theme reflected in literature. Topics and approaches developed by each instructor; opportunity for responsible, independent study; requires intensive practice in composition.
Prerequisites: take ENGL-101 or ENGL-111.

ENGL-111 Freshman English – Honors I (3 cr.)
COMSK/WRIT
Fall and Spring
Readings in world literature and related writing for training in composition techniques; documented paper. Placement Test Required.

ENGL-112 Freshman English – Honors II (3 cr.)
COMSK/RDG
Fall and Spring
Continuation of ENGL-111.
Prerequisites: take ENGL-101 or ENGL-111.

ENGL-113 Honors Seminar I (3 cr.)
COMSK/WRIT
Fall and Spring
Intensive reading and writing that examines topics in world literature from Shakespeare to the present.
Prerequisites: take ENGL-101 or ENGL-111.

ENGL-121 Introduction To Technical Communication (1 cr.)
Fall
Overview of trends, opportunities, and technologies used in the technical communication field.

ENGL-207 Writing For the Media (3 cr.)
Fall
Theory and practice of writing for the media.
Prerequisites: take ENGL-102, ENGL-112 or ENGL-113.

ENGL-210 Journalism Practicum(1 cr.)
Fall and Spring
Work on regularly published newspaper and submit articles for evaluation and publication. Prerequisites: take ENGL-102, ENGL-112 or ENGL-113. **R**

ENGL-218 Mass Communication: Effects of the Technology On Society (3 cr.)
TECH
Fall
The ideological and social implications of mass communication technology.
Prerequisites: take ENGL-101 or ENGL-111.

ENGL-225 Copyediting and Preparation (3 cr.)
Spring
Develop skill in expanding and reducing written materials; experience in copy reading, proofreading, headlines.
Prerequisites: take ENGL-102, ENGL-112 or ENGL-113.

ENGL-245 Creative Writing (3 cr.)
HUM/CRPRF
Fall and Spring
All aspects of imaginative writing. Prerequisites: take ENGL-102, ENGL-112 or ENGL-113. **R**

ENGL-247 Critical Writing (3 cr.)
COMSK/WRIT
Fall and Spring
The art of evaluation and judgment; writing critical reviews and articles; documented critical paper.
Prerequisites: take ENGL-102, ENGL-112 or ENGL-113.

ENGL-317 Topics in Journalism (1-3 cr.)
Intensive study of and practice in topics in journalism.
Prerequisites: take ENGL-102,ENGL-112 or ENGL-113.

ENGL-320 Business Writing (3 cr.)
Fall and Spring
Written communication in business: practice in writing memos, letters, electronic correspondence, reports and other practical communication.
Prerequisites: take ENGL-102, ENGL-112 or ENGL-113.

ENGL-330 Feature Writing (3 cr.)
Fall and Spring
Plan, research and create feature articles for newspapers, magazines and online publications; develop research tools and writing skills; observe ethical and legal considerations in writing.
Prerequisites: take ENGL-207.

ENGL-340 The Structure of English (3 cr.)
New analytic and descriptive methods applied to modern English.
Prerequisites: take ENGL-102, ENGL-112 or ENGL-113.

ENGL-342 Creative Writing II (3 cr.)
Advanced practice in creative writing that builds on skills taught in ENGL-245 Creative Writing, focusing on genre specific texts.
Prerequisites: take ENGL-245.

ENGL-343 Rhetoric of Technology (3 cr.)
TECH
Fall and Spring
Study of the way in which published information influences the development and dissemination of technology.
Prerequisites: take ENGL-102, ENGL-112 or ENGL-113.

ENGL-361 Hypertext Writing (3 cr.)
Fall and Spring
Investigate writer and audience interaction in a hypertext environment. Gain exposure to and utilize markup languages to maximize audience participation in websites and other hypertext documents. Research, production and testing of an original website and hypertext essays.
Prerequisites: take ENGL-102, ENGL-112 or ENGL-113.

ENGL-371 Advanced Rhetoric (3 cr.)
Fall, Spring and Summer
The evolution of rhetoric and application of classical and contemporary rhetorical principles to contemporary rhetorical problems, technical as well as traditional.
Prerequisites: take ENGL-102, ENGL-112 or ENGL-113.

ENGL-385 Document Design (2 cr.)
Fall
Approaches to transmitting information in print and screen documents through the application of rhetorical and design principles.
Prerequisites: take ENGL-102, ENGL-112 or ENGL-113; take ART-101.

ENGL-388 Writing Multimedia (3 cr.)
Fall, Spring and Summer
Writer and audience roles in planning and creating multimedia documents containing text, movie clips, sound clips, and still images. Develop proficiency in hardware and software of multimedia creation by researching, producing and testing original project.
Prerequisites: take ENGL-102, ENGL-112 or ENGL-113.

ENGL-415 Technical Writing (3 cr.)
Fall, Spring and Summer
On-the-job writing for business and industry; reports, letters and other documents.
Prerequisites: take ENGL-102, ENGL-112 or ENGL-113.

ENGL-435 Writing Technical Manuals (3 cr.)
Fall, Spring and Summer
Production of a technical manual — planning procedure, collecting information, analyzing audience, writing and field

testing.
Prerequisites: take ENGL-415.

ENGL-437 Technical Writing Practicum (1-3 cr.)
Fall, Spring and Summer
Plan, write and produce a technical document for a client. Principles of document design, clear writing for a specific audience, methods of determining client needs, and methods of producing the final document. Prerequisites: take ENGL-415. **R**

ENGL-438 Writing Practicum For Early Childhood Education (1 cr.)
Creation of professional letters, newsletters, and other written documents for future early childhood educators. Early Childhood majors only.
Prerequisites: take ENGL-102, ENGL-112or ENGL-113.

ENGL-440 Writer At Work Seminar (2 cr.)
Summer
Introduction to and practice in the professional side of creative writing, including but not limited to publication, reading, writers conferences and grant writing. Instructor's consent required.
Prerequisites: take ENGL-342.

ENGL-471 Freelancing/Professional Writing (3 cr.)
Fall, Spring and Summer
Working for clients, setting rates and estimating costs, investigating and contacting markets, contacting and interacting with editors, handling taxes and insurance, copyright, intellectual property, job search for freelance or corporate jobs.
Prerequisites: take ENGL-102, ENGL-112 or ENGL-113.

FCSE Family and Consumer Sciences Education

FCSE-101 Experiential Learning (2 cr.)
Fall
Contribution of Family and Consumer Sciences to development of individuals and families; responsibilities of a Family and Consumer Sciences professional.

FCSE-201 Teaching Methods in Family and Consumer Sciences Education (2-3 cr.)
ESC Fall and Spring
Presentation strategies appropriate in the field family and consumer sciences education. Education majors: Benchmark I completed.

FCSE-300 Externship: Family and Consumer Sciences Community Education (4-8 cr.)
Fall and Spring
Practicum in one or more of the following family and consumer sciences education programs: extension services, elementary education, post- secondary education, occupational teaching experience and community educational services. Approval of graduate program director required if taken for graduate credit. Consent of program director.

FCSE-301 Family and Consumer Sciences Education Curriculum (3 cr.)
Fall and Spring
Development of curriculum to meet needs of students in family and consumer sciences education programs. Education majors: Benchmark I completed.
Corequisite courses: FCSE-360.

FCSE-320 Career and Technical Education Programs in Family and Consumer Sciences Education (2 cr.)
Fall and Spring
Techniques, materials and curriculum for family and consumer sciences education wage-earning programs in secondary and post-secondary schools, preliminary procedures for program development. Education majors: Benchmark I completed.

FCSE-341 Clinical Experience in Schools(1 cr.)
Fall and Spring
Supervised experience in classroom teaching for development of motor, perceptual, social and cognitive learning through family and consumer sciences education substantive areas. Education majors: Benchmark I completed. **R**

FCSE-360 Family and Consumer Sciences Education/Family Life Evaluation (2 cr.)
Develop evaluation for family and consumer science education subject matter and critical thinking skills. Not applicable to occupational certification. Education majors: Benchmark I completed.
Corequisite: FCSE-301.

FCSE-380 Consumer Economics (3 cr.)
Spring
Personal and family consumer economics for family and consumer education programs; management of human and non-human resources in achieving personal, family and community goals.
Prerequisites: take ECON-201 or ECON-210.

FCSE-385 Family Housing (3 cr.)
Fall
Individual/family's housing needs and resources as a basis for family and consumer education programs. The impact of historical, environmental, social, cultural, and technological, aesthetic, and design influences.

FCSE-397 Field Experience in Family and Consumer Sciences Education (2 cr.)
Fall, Spring and Summer
Field experience related to family and consumer sciences education skills and knowledge used in teaching wage-earning courses at secondary level.

FCSE-448 Student Teaching — Family and Consumer Sciences Education (16 cr.)
Fall and Spring
Student teaching practicum in K-12 settings in family and consumer sciences education/family life. Consent of program director. Minimum cumulative GPA 2.75.
Prerequisites: take FCSE-301, FCSE-360.

FCSE-451 Family Life Education Programs (2 cr.)
Fall and Spring
Development of family life education programs including methods, materials and techniques for teaching family relationships and child development at the secondary level.

FCSE-488 Internship Teaching (8 cr.)
Fall and Spring
Alternate method of obtaining student teaching experience. Teacher interns receive license to teach and salaried appointments in cooperating school systems for one semester.
Prerequisites: take FCSE-301.

FCSE-497 Field Experience in Family and Consumer Sciences Education (2 cr.)
Field experience related to family and consumer sciences education skills and knowledge used in teaching wage-earning courses at secondary level.

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FN Food and Nutrition

FN-101 Dietetics as a Profession 1 cr.
Fall
Survey of types of dietetic and foodservice administration programs in the United States; role and function of staff; professional literature. Equivalent to 229-101.

FN-102 Nutrition For Healthy Living 2-3 cr.
HPE HLTH
Fall and Spring
Food selection and eating patterns/standards, applied nutrition knowledge and interrelationships, nutrition information

source analysis, weight management, the nutrition- exercise-fitness connection. Analysis of personal lifestyle and food patterns in relationship to optimal physical and mental well being. Equivalent to FN-106, 229-202, 229-206.

FN-106 Nutrition in the Hospitality Industry 2 cr.
Fall and Spring
Basic principles with application to the hospitality industry. Basic physiological nutrition; cultural and psychological influences on food preference. Interpretation of nutrition information, food composition data, and discussion of appropriate products and services. Nutrition analysis and programming on and off the computer will be stressed. Not appropriate for students with credit in FN-202 or FN-212. Equivalent to FN-102, 229-202, 229-206, FN-212, 229-212.

FN-111 Food Systems and Technology Futures 1 cr.
Fall
Introduction to food systems and technology with emphasis on trends, career opportunities and competencies required for success in the concentration areas of food systems management, food science, food merchandising and distribution and food communication. Equivalent to 229-111.

FN-124 Foods 4 cr.
Fall and Spring
Scientific principles and application in the selection, preparation and service of food. Equivalent to 229-124.

FN-202 Food and Beverage Distribution Industry 3 cr.
An introductory course for students in the field of food and beverage merchandising and distribution. A study of history, evolution, classification, manufacture/production, packaging, distribution, and merchandising with an emphasis on trends and employment. Resource persons from industry and field trips will be utilized. Equivalent to 229-302.

FN-207 Medical Terminology 1 cr.
Fall and Spring
Medical terminology for allied health occupations. Self-paced instruction utilizing a word-building system to learn word parts used to construct or analyze new terms. Emphasis on spelling, definition, usage and pronunciation. Equivalent to 229-407.

FN-208 Management of Food Production 3 cr.
Fall and Spring
Development and application of management principles to decision making in small batch food production which is based on menu driven concepts. Equivalent to 229-308. Prerequisites: take one group: take FN-124 and FN-212, or take FN-212 and FN-240.

FN-212 Nutrition 3 cr.
Fall and Spring
Basic principles of nutrition applied to current issues in health maintenance. Equivalent to 229-136, 229-212, FN-106, 229-206. Prerequisites: take BIO-132 or BIO-134, and take CHEM-115 or CHEM-125.

FN-220 Outdoor Cooking 1 cr.
Food preparation principles in cooking and serving outdoors; equipment for outdoor food preparation; foods for camping, backpacking and canoe camping; preparing wild game and gathering and preparing wild foods. Equivalent to 229-220.

FN-222 Food Technology 2 cr.
TECH GLP
Fall, Spring and Summer
Food processing technology and how it impacts society, individual health and well-being, environment and the future; technological innovations and new developments to meet the changing requirements of society and increasing global demand for food.

FN-225 Spec Topics in Food and Nutrition 1-2 cr.
Summer
Study of special topics in food and nutrition. Equivalent to 229-225. **R $**

FN-236 Nutrition For Young Children 1-2 cr.
Fall, Spring and Summer
Impact of nutrition on growth, development and health of young children. Assessment of nutritional status, changing needs and eating patterns, the link between nutrition, dietary practices, and behavior, and translating current nutrition in formation into effective nutrition education strategies for children. Equivalent to 229-136, 229-236. Prerequisites: take FN-102 or FN-106.

FN-240 Food Science 4 cr.
Fall and Spring
Physical and chemical changes affecting selection, preparation and service of food. Equivalent to 229-240. Prerequisites: take CHEM-201.

FN-260 Menu Planning and Design 2 cr.
Fall
Principles of menu planning, design and production for commercial and institutional food establishments. Equivalent to 229-260.

FN-305A Baking Processes 1 cr.
Equivalent to 229-305A **$**

FN-310 Lifespan Nutrition 3 cr.
Spring
Nutrition concepts and concerns associated with each lifespan stage; integration of social, psychological, cultural, economic, and legislative factors to develop issue-centered approaches to meet nutrition needs. Equivalent to 229-530. Prerequisites: take FN-102 or FN-106, and take one course in Biology.

FN-312 Nutritional Assessment 2 cr.
Fall and Spring
Introduction to basic components of nutritional assessment as applied to individuals. Prerequisites: take FN-212 and CHEM-311.

FN-320 Advanced Nutrition 3 cr.
Fall and Spring
Principles of human nutrition applied to individual, family, community and world problems. Equivalent to 229-410, 229-520. Prerequisites: take FN-212 and CHEM-311.

FN-325 Special Topics in Food and Nutrition 1-3 cr.
Fall and Spring
Study of special topics in food and nutrition. **R**

FN-342 Advanced Foods 3 cr.
Fall
Comparative studies of food selection and preparation; appraisal of foods. Equivalent to 229-542, 229-642. Prerequisites: take FN-124 or FN-240.

FN-350 Food Processing 3 cr.
Spring
Industrial methods used to prepare and preserve food. Equivalent to 229-650. Prerequisites: Take FN-124 or FN-240; take MATH-120 and BIO-306; take CHEM-115 or CHEM-125 or CHEM-135.

FN-355 Sports Nutrition 3 cr.
Spring
Nutritional and metabolic requirements of physical activity. Metabolic fuel utilization during exercise and physiological adaptations to exercise training will be discussed. The health and well- being benefits of an optimal diet-exercise regime will be emphasized. Equivalent to 229-555. Prerequisites: take FN-320 and CHEM-311; take BIO-132 or BIO-134.

FN-360 Nutrition Counseling: A Team Approach 3 cr.
Fall and Spring
Inter-disciplinary team approach to individual and group client-centered nutrition counseling which includes assisting and advising clients on dietary information. Skills and techniques based on nutrition counseling theories that are most useful to registered dietitians in enhancing quality of life and planned nutrition intervention. Equivalent to 229-360. Prerequisites: take FN-212.

FN-380 Community Nutrition 3 cr.
Fall and Spring
Current status and legislation of community nutrition programs. Assessment of community needs and resources, program planning, funding, and evaluation. The role of the community nutritionist/home economist to help individuals, families, and communities solve nutrition problems. Equivalent to 229-380. Prerequisites: take FN-212.

FN-397 Field Experience 2 cr.

FN-397C Field Experience Seminar: Dietetics 1-2 cr.
Field experience related to the dietetic areas. Prior approval of field position, 320 hours of work experience, and seminar. Written reports required for two-credit option. Equivalent to 229-397C.

FN-397E Field Experience: Dietetics 1 cr.
Field experience related to the dietetic areas. Prior approval of field position, 320 hours of work experience, and seminar. Written reports required for two-credit option. Equivalent to 229-397E.

FN-406 Nutrition Education 3 cr.
Fall and Spring
Nutrition education as planned behavioral change: problems and solutions in instructing various populations; identification, development and evaluation of nutrition resources. Equivalent to 229-606. Prerequisites: take FN-320 and FCSE-201.

FN-410 Food and Nutrition Policy Regulation and Law 3 cr.
Fall
Food and nutrition policy development and evolution. Key acts and agencies governing food regulation and law. Process of creating or changing law. Compliance and enforcement rules in
inspection, labeling, export and import. Administrative practice in food law including proceedings and judicial review. Equivalent to 229-610.

FN-413 Maternal and Child Nutrition 3 cr.
Fall
Application of principles to maternal, infant, child and adolescent nutrition. Equivalent to 229-633. Prerequisites: take one group: take FN-212 and BIO-132 or take FN-212 and BIO-234.

FN-414 Catering 3 cr.
Spring
Theory and application of operational and managerial principles for on/off-premise catering for special events. Cannot be taken for credit by students who have previously taken HT-424.
Equivalent to 229-614, 245-614, HT-424. Prerequisites: take FN-124 or FN-240.

FN-415 Nutritional Issues in Gerontology 3 cr.
Theory and relationships of nutrition, longevity and aging. Food and nutrition legislation for the elderly--theory and implementation. Nutritional implications of acute and chronic disease states common among the elderly. Prerequisites: take FN-320 and CHEM-311.

FN-418 Diet Therapy 4 cr.
Fall and Spring
Principles and methods for use of diet as therapy in certain pathological conditions. Equivalent to 229-618. Prerequisites: take FN-320 and BIO-362.

FN-420 Food Styling 1-3 cr.
Fall
Food as media for artistic expression; effective use of color, form and texture. Equivalent to 229-620. Prerequisites: take FN-124 or FN-240. **R**

FN-431 Readings in Food Science and Nutrition 1-2 cr.
Critical reading, evaluating, and reporting from pertinent current journals and other publications. Equivalent to 229-631. **R**

FN-438 Experimental Foods 3 cr.
Fall and Spring
Experimentation with selected food materials, techniques and equipment; directed study in individually chosen area. Equivalent to 229-638. Prerequisites: take FN-124 or FN-240; take CHEM-115 or CHEM-125 or CHEM-135.

FN-442 Basic Sensory Analysis 3 cr.
Spring
Basic understanding of the psychobiology and physiology of senses and the role both play in consumer product acceptance. Basic tests of sensory analysis, including both objective trained panel difference tests and subjective
preference/acceptance tests. Appropriate for all majors who produce products for/or merchandise to consumers. Equivalent to 229-442. Prerequisites: take FN-124 or FN-240.

FN-450 Food Engineering 3 cr.
Fall

Application of pertinent chemistry, physics and mathematics principles to food processing. Equivalent to 229-651. Prerequisites: take CHEM-201 and MATH-153 and MATH-154 and FN-350.

FN-461 Multicultural Aspects of Food and Nutrition Patterns 3 cr.
ESC Fall and Spring
Food and nutrition patterns as influenced by social, religious, geographical, economic and political factors. Cultures emphasized include Native American, African American, Hispanic and Asian American. Food as a means of cross-cultural communication. Equivalent to 229-661,
Prerequisites: take FN-124 or FN-240.

FN-470 Food Distribution Operations and Control 3 cr.
Current trends and management strategies in the distribution of food and beverages, from manufac- turer to consumer. Equivalent to 229-570, 229-370. Prerequisites: take FN-202 BUMKG-330.

FN-497C Field Experience: Food Systems and Technology 1 cr.
Seminar: analysis, interpretation and synthesis of food systems and technology principles through a written paper and oral seminars following 320 hours of field work in an approved position. Integrates synergistic principles/activities from program courses and among concentrations. Equivalent to 229-497C.

FN-497E Field Experience: Food Systems and Technology 1 cr.
Food systems and technology area field experience. Approved field position, 320 hours of work experience, and development of concept/outline for written analysis paper. Equivalent to 229-497E.

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FREN French

FREN-101 Elementary French I (4 cr.)
COMSK LANG FGLP Fall
Listening, pronunciation, reading, and writing. Basic vocabulary, polite phrases, questions and answers. Adjective agreement, present and some past-tense verbs. Cultural information about the French-speaking world.

FREN-102 Elementary French II (4 cr.)
COMSK LANG FGLP Spring
Second level of understanding, speaking, reading, and writing in French. Introduction to future, conditional, imperfect and subjunctive verbs. Direct and indirect object pronouns. Short spontaneous and directed conversations. Topics in cultures of French-speaking people. One year of high school French or FREN-101 req.

FREN-121 Practical French I (2 cr.)
FGLP Fall and Spring
First quarter college French. Conversational phrases and vocabulary for practical situations. Basic present tense verb patterns. Intensive pronunciation drill. Not for students who have taken FREN-101.

FREN-122 Practical French II (2 cr.)
COMSK LANG FGLP Fall and Spring
Second quarter college French, conversational phrases and vocabulary, irregular and past tense verb patterns. Not appropriate for students who have completed FREN-101 (328-101). One year of high school French or FREN-121 Req.

FREN-123 Practical French III (2 cr.)
COMSK LANG FGLP Fall and Spring
Third quarter college French. Imperfect and reflexive verbs, direct and indirect object pronouns, commands, conversational vocabulary.(Not for student who have complete FREN-102.) One year of high school French or FREN-101 req.

FREN-124 Practical French IV (2 cr.)
COMSK LANG FGLP Fall and Spring
Fourth quarter college French. Future, conditional and subjunctive verbs. Introduction to relative pronouns. Conversational vocabulary. (Not for students who have completed FREN-102.)

FREN-201 Intermediate French I (4 cr.)
HUM FLC FGLP Fall
Vocabulary development through readings and discussion on French and Francophone civilization. History, art, music, short stories and poems, including contemporary culture. Taught in French. Two years of high school French or FREN-102 req.

FREN-202 Intermediate French II (4 cr.)
COMSK LANG FGLP Spring
Grammar review, contemporary vocabulary, free conversation in French. Three years of high school French or FREN-201 req.

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GCM Graphic Communications Management

GCM-101 Introduction To Graphic Communications Management (1 cr.)
Fall and Spring
Introduction to graphic communications management trends, opportunities, and technologies in the graphic communications industry. Instructor's consent required. GCM majors only.

GCM-141 Graphic Communications (3 cr.)
Fall, Spring and Summer
Overview of the graphic communications industry and hands-on introduction to production workflow from design through delivery. Digital prepress (desktop publishing), printing processes, postpress and finishing, raw materials, buying and specifying printed products.

GCM-151 Prepress Tools and Processes (3 cr.)
Fall, Spring and Summer
Digital prepress tools and processes for print reproduction. Prepress software, image capture/ creation, pagination, imposition principles, film assembly, proofing, and platemaking.
Prerequisites: take GCM-141.

GCM-251 Digital Prepress File Creation (3 cr.)
Fall, Spring and Summer
Digital creation, capture and manipulation of graphics for color layouts for print and digital distribution. Prepress systems, workflow, color theory, file and font management, document layout, proofing, imposition, and submission of files for output.
Prerequisites: take GCM-151 or DES-220.

GCM-266 Digital and Offset Press Systems (4 cr.)
Fall and Spring
Imaging paper of other substrates via offset lithography and digital printing methods from an output-ready digital file. Image carriers, press systems, process control, densitometry, colorimetry, ink, toners, and substrates. Reproduction of line and halftone copy, in multiple and process colors.
Prerequisites: take GCM-141.

GCM-270 Postpress Operation and Planning (3 cr.)
Fall and Spring
Current and emerging technologies for postpress operations in bindery and finishing. Postpress production and job planning from the postpress perspective. Quality control tools and techniques as applied to postpress operations.
Prerequisites: take GCM-141.

GCM-300 Workshop (1-3 cr.)
Fall, Spring and Summer
Special topics in graphic communications, providing hands on or experiential learning activities. Specific content and title to reflect the topic of the workshop. **R**

GCM-351 Digital Prepress Workflow Management (3 cr.)
Fall and Spring
Digital prepress processes and services offered by graphic communicaitons service providers. Integrated systems, scripting, automation, XML utilization, variable data digital printing and personalization, asset management, digital

distribution alternatives, and prepress network and workflow management.
Prerequisites: take GCM-251.

GCM-356 Color Electronic Prepress (3 cr.)
Fall, Spring and Summer
Electronic capture, manipulation, and evaluation of color images for presentations and print production. Work flow, system, and file management issues faced in complex page layout.
Prerequisites: take 1 option: take GCM-141 and GCM-151, or take GCM-141 and DES-220.

GCM-362 Screen and Specialty Print Manufacturing (3 cr.)
Fall and Summer
Applications and techniques for screen and specialty printing on a variety of substrates. Issues and process-control concerns related to these image transfer methods.
Prerequisites: take GCM-141. **$**

GCM-363 Package Printing (3-4 cr.)
Fall and Spring
The production of graphics on labels, cartons, and flexible packages with an emphasis on flexography and rotogravure. Present and future technology trends in package printing.
Prerequisites: take GCM-141. **$**

GCM-367 Reproduction Measurement and Control(3 cr.)
Fall and Spring
Concepts and techniques of controlling the tone reproduction of pictures during printing. Press fingerprinting process and application of tone correction curves to printed images. Color
management concepts and techniques. Statistical Process Control as applied to the measurement and control of variability in printing.
Prerequisites: take GCM-266 and either STAT-130 or STAT-320. **R**

GCM-380 Graphic Communications Estimating and Scheduling (3 cr.)
Fall and Spring
Graphic communications production issues including production cost, estimating practices, labor issues, production scheduling and coordination.
Prerequisites: take GCM-251, GCM-266, and GCM-270; and take BUACT-201or BUACT-206.

GCM-443 Graphic Communications Practicum (3 cr.)
Fall, Spring and Summer
Integration of all graphic communications manufacturing processes in the design and manufacture of printed products. Special emphasis on the process and workflow management roles of estimating, customer service, scheduling, planning, production supervision and quality control.
Prerequisites: take GCM-251, GCM-266, and GCM-380. **R**

GCM-445 Publication Production (3 cr.)
Fall, Spring and Summer
Cross-discipline work teams experience integration of skills developed in English, speech, art, graphic communications, industrial management and business courses to design, plan, schedule, produce and distribute and actual magazine.
Prerequisites: take GCM-141.

GCM-446 Digital Imaging (3 cr.)
Fall and Spring
Preparation, capture and manipulation of digital information for current and emerging digital distribution technologies. Repurposing of print media files for alternative distribution systems.
Prerequisites: take GCM-356.

GCM-475 Graphic Communications Cost Estimating (3 cr.)
Fall and Spring
Estimating production costs and establishing budget hourly rates and completion time for tasks associated with graphic reproduction. Utilization of a computer integrated manufacturing (CIM) information system to facilitate estimating and managing production processes based on data collected from manufacturing floor real-time terminals.
Prerequisites: take GCM-141, and take BUACT-200 or BUACT-206.

GCM-480 Graphic Communications Customer Service And Administration (3 cr.)
Fall and Spring
Administrative, management and leadership roles in directing of graphic communications manufacturing companies

including sales, customer service, management, human resources, and training. Senior level or higher.
Prerequisites: take GCM-380.

GCM-495 Graphic Communications Management Seminar(3 cr.)
GLP
Fall, Spring and Summer
Overview of the graphic communications industry; its size, market segments, profitability and organization. Printing company annual reports are researched and analyzed. Strategic planning, management and leadership, industry trends and forecasts, trade organizations, news and other information sources. Impact of technology, global issues, and competing information distribution channels. Senior level or higher.
Corequisite courses: GCM-443. **R**

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GEM Golf Enterprise Management

GEM-101 Introduction to Golf Enterprise Management 1 cr.
Overview of the golf industry, national and international golf associations, careers in the golf industry, and the B.S. in Golf Enterprise Management.

GEM-201 Principles of Golf Enterprise Management 3 cr.
Comprehensive survey of golf facility operations and management from perspectives of resort, private, semi-private, and daily fee courses, to include principles of business and customer service, human resource management, course design and management, retail and back shop operations, food and beverage management, and event planning.

GEM-266 Golf Course Soils, Layout, and Designs 3 cr.
Fall and Spring
Golf course layout and design, soil characteristics that affect successful turf grass establishment and maintenance. Topics include soil components, soil physical and chemical properties, drainage, irrigation, golf course layout, design and construction, and risk assessment.
Prerequisites: GEM-101 and GEM-201

GEM-301 Customer Development, Retention and Marketing 3 cr.
Spring Semester
Trends and programs for golf course customer recruiting and retention, marketing strategies, conducting and applying market research including database and internet marketing for golf course customer development and retention in public fee, semi-private, private and resort facilities.

GEM-401 Golf Enterprise Management: Project Management 3 cr.
Tools, techniques, and challenges associated with planning and managing projects within a golf club settin, such as running a golf outing, club-house renovations, course changes, adding a second nine holes.

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GEOG Geography

GEOG Geography GEOG-104 World Geography 3 cr.
SBSCI GEOG Fall and Spring Semesters
Introduction to regional and cultural geography of the world; physical and human resources of major areas of the globe. Equivalent to 336-104.

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GER German

GER-121 Practical German IA 2 cr.
Fall Semester
First quarter college German. Conversational phrases and vocabulary for practical situations. Basic present tense verb patterns. Intensive pronunciation drill. Equivalent to 331-121.

GER-122 Practical German IB 2 cr.
GECOMSK LANG Fall and Spring Semesters
Second quarter college German. Conversational phrases and vocabulary. Present and past tense verb patterns. Nominative, accusative and dative case in short sentences. Equivalent to 331-122. P: GER-121.

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HDFL Human Development and Family Living

HDFL-100 Introduction to Early Childhood Programs 1 cr.
Fall and Spring Semesters
history of early childhood programs for children through age 8, developmentally appropriate practice, current issues, professionalism, employability skills and attitudes, career exploration. Early Childhood majors only. Equivalent to 212-100.

HDFL-101 Introduction to Human Development and Family Studies 1 cr.
Fall and Spring Semesters
Fields of human development and family studies; occupational opportunities in programs serving families and children. Equivalent to 212-101.

HDFL-115 Individual and Family Relations 3 cr.
ESC Fall and Spring Semesters
Dynamics of social-psychological forces affecting family interaction. Explorations of courtship, husband-wife, parent-child relationships.
Equivalent to 212-250, 212-115A.

HDFL-124 Human Development: Early Childhood 3 cr.
Fall and Spring Semesters
Principles and theories of growth and development prenatal through age 8, with a systemic perspective on physical, motor, cognitive, language, social and emotional development. Observations required. Equivalent to 212-124.

HDFL-195 Honors Seminar: Lifespan Human Development 3 cr.
SBSCI PSYC Fall Semester
Review, discuss and analyze theories of human development across the lifespan. Acceptance into Honors Program. Equivalent to HDFL-255, 212-195, 212-255A, 212-155, 212-355.

HDFL-215 Dynamics of Family Development 3 cr.
ESB Fall and Spring Semesters
A study of the family with emphasis on environmental factors significant in marriage and family relationships. Equivalent to 212-350, 212-215. P: HDFL-115.

HDFL-225 Skill Training for Individual/Family Interventions 3 cr.
Fall and Spring Semesters
Concepts and skills in developing rapport, assessing goals and initiating change with children, parents, couples and families across the life span in professional settings. Equivalent to 212-354, 212-225.

HDFL-235 Child Development Laboratory 1 cr.
Fall and Spring Semesters
Observation and/or participation in Early Childhood program. May be repeated for different experiences. Equivalent to 212-235. P: HDFL-124. **R**

HDFL-255 Lifespan Human Development 3 cr.
SBSCI PSYC ESC Fall and Spring Semesters

Lifespan individual development. Critical examination of influences on individual development across the lifespan. Equivalent to HDFL-195, 212-195, 212-255A, 212-155, 212-355.

HDFL-257 Lifespan Sexuality 3 cr.
HPE HLTH Fall, Spring and Summer
Introduction to human sexuality over the lifespan, utilizing individual and family perspective. Focus is development of sexual behavior, relationships, and gender characteristics from infancy to late life. Equivalent to 212-357, 212-257.

HDFL-264 Child Guidance 3 cr.
Fall and Spring Semesters
Developmentally appropriate principles and strategies for child guidance. Systems perspective, positive discipline, theoretical approaches, current topics, developing a personal/eclectic approach.
Equivalent to 212-264. P: HDFL-124.

HDFL-265 Child Guidance Practicum 1 cr.
Fall, Spring and Summer
Supervised participation in Child and Family Study Center or similar center: guidance techniques and understanding of children. Equivalent to 212-265. P: HDFL-264.

HDFL-270 Seminar on Self-Growth 2 cr.
Fall and Spring Semesters
Theories of the self; exploration of aspects of self-development and actualization. Equivalent to 212-270, 212-435, 212-535.

HDFL-280 Child Development II 3 cr.
Fall and Spring Semesters
Empirical study of physical, intellectual, social and emotional development of children. Equivalent to 212-524, 212-280.

HDFL-292 Honors Seminar: Modern Debates About "The Family" 3 cr.
Spring Semester
Review, discuss and debate the various positions taken by commentators on the strength or weakness of modern families in western industrial societies. Equivalent to 212-292.

HDFL-310 Family Stress, Coping and Adaptation 1 cr.
Summer Session
Impact of family development and stress on individual and family well-being. Equivalent to 212-310, 212-615, 212-510.

HDFL-313 Parent Education/Involvement 2 cr.
Fall and Spring Semesters
Parent groups: training of leaders, survey of literature. Practicum with parent groups. Equivalent to 212-313, 212-507, 212-407.

HDFL-320 Divorced, Single Parent and Remarried Family 2 cr.
Fall, Spring and Summer
Trends and issues in divorce, single parenting and remarriage related to effects on adults, children and society. Equivalent to 212-525, 212-320A.

HDFL-330 Adulthood and the Family 3 cr.
Spring Semester
Study of adults in the family context during the early and middle years.
Equivalent to 212-330A, 212-530.

HDFL-331 Hospice Clinical Experience 1-2 cr.
Fall, Spring and Summer
Work with an area hospice organization under the supervision of the hospice consultant or patient care coordinator.
Equivalent to 212-331, 212-531.

HDFL-333 Language Arts in Early Childhood Education 2 cr.
Fall and Spring Semesters
Early childhood education language arts teaching methodologies, emphasizing the development of young children's skills in listening, writing and speaking.
Equivalent to 212-533.

HDFL-335 Seminar: The Culturally Distinct Child and Family 2 cr.
ESA Fall and Spring Semesters
Study of cultural, ethnic, racial and economic influences on the child and family in the United States. Emphasis on knowledge and skills to improve human relations in settings serving young children and families. Equivalent to 212-335, 212-685.

HDFL-336 Experience: The Culturally Distinct Child and Family 1 cr.
ESA Fall and Spring Semesters
Intensive experience working directly with racial, cultural or economic groups whose background the student does not share. Equivalent to 212-686, 212-336.

HDFL-340 Human Development: Aging Person 3 cr.
Fall and Spring Semesters
Survey of the field of gerontology focusing on what it means to grow old in the United States from a systemic perspective. Multicultural attitudes toward aging; the psychological, physical, social and economic needs and problems of the older population are addressed. Consideration will be given to the personal, familial, environmental and social resources of the older population. Equivalent to 212-340A, 212-680, 212-430. P: HDFL-115.

HDFL-341 Family Caregiving to Dependent Elders 1 cr.
Fall, Spring and Summer
Unique challenges confronting adult children who provide care to aging parents. Government, agency, workplace and family policies and practices promoting and/or undermining family strengths and well-being. Equivalent to 212-540, 212-341.

HDFL-344 Science, Mathematics and Social Studies - Early Childhood 4 cr.
Fall and Spring Semesters
Directed study of application of skills for teaching mathematics and science concepts to young children: organization and presentation of teaching/learning experiences for children in early learning situations. Equivalent to 212-344, 212-333.

HDFL-345 Health Care Dilemmas and Decisions for Families 2 cr.
Spring Semester
Multidisciplinary study of bioethical issues facing U.S. families, including end-of-life decision making, reproductive technologies, and distributive justice.
Equivalent to 212-345A, 212-605.

HDFL-346 Exceptional Needs and Programming - Early Childhood 2 cr.
Fall and Spring Semesters
Program development and implementation for preschool mentally handicapped children. Department chair consent required. Equivalent to 212-545.

HDFL-351 Death and the Family 1 cr.
Fall and Spring Semesters
Current literature concerning how families deal with the death of a member; how adults can help children cope with death in the family, how other family members deal with death of older and younger family members. Equivalent to 212-351.

HDFL-360 The Workplace and the Family 2 cr.
ESC Spring Semester
Linkages between families and workplace; corresponding consequences for individual family well-being and the workplace. Equivalent to 212-654, 212-360.

HDFL-365 Family Resource Management 2 cr.
Fall, Spring and Summer
Examination of individual and family resource management behaviors including: valuing, goal setting, decision making, implementation, resource use, resource exchange and resource creation, and cultural differences in resource management. Equivalent to 212-365. P: HDFL-115, HDFL-215.

HDFL-370 Introduction to Marriage and Family Therapy 3 cr.
Fall Semester
Conceptual frameworks and approaches to marriage and family counseling.
Equivalent to 212-650, 212-370.

HDFL-371 Marriage and Family Therapy Seminar 3 cr.
Spring Semester
Application of basic counseling techniques in premarital, marital, family and couples-group counseling; supervised by professional marriage and family counselor. Equivalent to 212-651, 212-371.

HDFL-385 Family-Based Employee Assistance Programs 3 cr.
Fall, Spring and Summer
Structures and functions of employee assistance programs with employees and their families being the primary unit of analysis and service. Instructor's consent required. Junior level or higher. Equivalent to 212-585.

HDFL-395 Special Topics in Human Development 1-2 cr.
Special topics in human development; repeatable for different topics. Junior level or higher. Equivalent to 212-595. **R**

HDFL-401 Human Development: Advanced Child Development and Guidance 1 cr.
Fall and Spring Semesters
Senior level or higher. Equivalent to 212-401A. P: HDFL-264.

HDFL-407 Parent Counseling 2 cr.
Approaches and techniques for working with parents; observation and experience in childrearing problems parents face. Equivalent to 212-607.

HDFL-420 Family Research and Methodology 3 cr.
Spring Semester
Analysis of family theory, research methodology and selected topics in family relations. Equivalent to 212-420, 212-590. P: HDFL-115, HDFL-215.

HDFL-424 Advanced Child Study 3 cr.
A study of principles and review of literature pertaining to children.
Equivalent to 212-624.

HDFL-425 Death Education and Counseling in Families 2 cr.
Death and dying theory; research, practice and application in education and individual and family counseling. Equivalent to 212-690, 212-425.

HDFL-426 Special Topics in the Study of Family Life 1-3 cr.
Family life programs and literature; individual study of problems of personal or professional interest. Equivalent to 212-626.

HDFL-437 Seminar in Child Development 2 cr.
Fall and Spring Semesters
Special problems and aspects in child development; preference given to students' interests. Equivalent to 212-637.

HDFL-440 Child and Family Law 3 cr.
Spring Semester
Legal issues affecting children and families. Equivalent to 212-601, 212-440. P: HDFL-115, HDFL-215.

HDFL-450 Family Impact Seminar 3 cr.
Spring Semester
Content, methods and process of assessing impact of public policy on children and families.
Equivalent to 212-450, 212-610, 212-450A. P: HDFL-115, HDFL-215.

HDFL-453 Relationship Communication Training 2 cr.
Fall Semester
Communication theories and skills applied to marital, family and other intimate relationships. Application of communication skills to personal relationships and professional work. (Preferably, but not necessarily, have your premarital or marital partner with you). Instructor's consent required. Equivalent to 212-653.

HDFL-454 Suicide and the Family: Family and Community Intervention 1 cr.
Analysis of attempted and completed suicides from an interdisciplinary perspective. Forms of intervention, with emphasis upon family therapy, are compared, contrasted, and evaluated for suitability. P: HDFL-215.

HDFL-462 Early Childhood Education Program Models 1 cr.
Fall, Spring and Summer
Exploration and analysis of contemporary early childhood education program models and practices in various settings.
Senior level or higher. Equivalent to 212-662.

HDFL-464 Special Topics in Early Childhood Curriculum 1-3 cr.
Philosophy and methodology of early childhood education: problems confronting teachers. Equivalent to 212-664. **R**

HDFL-490 Professional Issues: Human Development and Family Studies 2 cr.
Fall and Spring Semesters
Issues related to professional development in areas of human development and family studies. Human Development and Family Studies majors only. Must have 2.5 GPA in professional core. Equivalent to 212-401, 212-490.

HDFL-491 Practicum in Human Development and Family Studies 4-8 cr.
Fall, Spring and Summer
Practicum experience in human development and family studies. Student will be placed in community agency or organization and supervised by site supervisor and university supervisor. Must have 2.5 GPA in professional core. Consent of program director. Equivalent to 212-693, 212-491. P: HDFL-490. **R**

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HIST History

HIST-120 Early United States History 3 cr.
HUM HIST ESB Fall, Spring and Summer
U.S. history to 1865: political, economic and social forces that have shaped the nation to close of Civil War. Equivalent to 338-120.

HIST-121 Modern United States History 3 cr.
HUM HIST ESB Fall, Spring and Summer
U.S. history since 1865: political, economic and social forces that have shaped the nation since close of Civil War. Equivalent to 338-121, 338-105.

HIST-140 Western Civilization 3 cr.
HUM HIST Fall and Spring Semesters
Survey of Western civilization along the Nile, the Fertile Crescent, through Greece, Rome, the Middle Ages, the Renaissance, and the Reformation.
Equivalent to 338-140.

HIST-141 Western Civilization 3 cr.
HUM HIST Fall and Spring Semesters
Survey of Western civilization from Reformation to present.
Equivalent to 338-141.

HIST-210 Modern World 3 cr.
HUM HIST Fall, Spring and Summer
Modern trends in terms of historical backgrounds as frame of reference for interpreting modern world. Equivalent to 338-210.

HIST-320 History of Russia 3 cr.
HUM HIST Fall and Spring Semesters
Survey of Russia's historical development since 862. Equivalent to 338-320.

HIST-322 African-American History 3 cr.
HUM HIST ESA Fall and Spring Semesters
Social, cultural, economic and political history of African-Americans, with special focus on the United States. Equivalent to 338-322.

HIST-330 History of World War II 3 cr.
HUM HIST Fall and Spring Semesters
Causes, conduct and effects of World War II. Equivalent to 338-330.

HIST-350 History of the Vietnam War 3 cr.
HUM HIST ESC Fall and Spring Semesters
American role in the Vietnam War, particularly goals, objectives and dilemmas faced by American policymakers; roles and contributions of American men and women in the military and in civilian society; development and impact of the anti-war movement; and long-term consequences of the war on American culture and society.

HIST-360 Asian History 3 cr.
HUM HIST Fall and Spring Semesters
Survey of political, social, religious and economic history of Asia, India, China, Japan and the Philippines in modern world. Equivalent to 338-360.

HIST-380 Latin American History 3 cr.
HUM HIST
Political, social and economic history of Middle and South America, pre-Columbian to present. Equivalent to 338-380.

HIST-460 History Methods 2 cr.
Fall and Spring Semesters
Historiography and application of the historical method, including the study of teaching methods, instructional materials, and evaluation techniques. History minors only. Equivalent to 338-460.

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HLTH Health

HLTH-101 Discovering Wellness 1 cr.
HPE HLTH Fall and Spring Semesters
Introduction to the components and benefits of high level wellness; includes self-assessment and the development of an action plan for lifetime wellness. Equivalent to 466-101, 366-101.

HLTH-340 ARC Standard First Aid and Personal Safety 2 cr.
Fall, Spring and Summer
American Red Cross certification in standard first aid and personal safety; increase personal safety and accident-prevention knowledge; learn to administer emergency first aid to self or others. Equivalent to 366-340, 466-340.

HLTH-346 ARC Cardiopulmonary Resuscitation .5 cr.
Fall, Spring and Summer
Techniques of basic life support: Recognizing respiratory and/or cardiac arrest and properly administering cardiopulmonary resuscitation (CPR) to maintain life. Successful completion results in 1-year certification in ARC basic life support course in CPR. Equivalent to 366-346, 466-346.

HLTH-350 Prevention and Care of Athletic Injuries 3 cr.
Fall Semester
Provides prospective physical education and/or coaching professional with basic understanding of prevention, treatment and care of athletic injuries. Equivalent to 366-350, 466-350. P: HLTH-340; and BIO-142, BIO-134 or HLTH-355.

HLTH-355 Kinesiology 3 cr.
Fall Semester
Body movements and principles affecting them.
Equivalent to 366-355, 466-355. P: BIO-132.

HLTH-365 Physiology of Exercise 3 cr.
Spring Semester
Effects of exercise on sports participants: heat stress, body composition, nutrition, cardiovascular function, energy expenditure, respiratory mechanics and ventilation factors. Equivalent to 366-365, 466-365. P: BIO-132 or BIO-134.

HLTH-370 Evaluation and Recognition of Athletic Injuries 3 cr.
Fall and Spring Semesters
Professional preparation course for students interested in obtaining certification in athletic training. Emphasis is placed upon the acquisition of knowledge and skills required for joint and soft tissue evaluation. Equivalent to 466-370. P: HLTH-350.

HLTH-490 Athletic Training Practicum 2 cr.
Fall and Spring Semesters
Practical application of training principles: prevention and care of athletic injuries, facilities direction, and program management. Equivalent to 366-490, 466-490. P: HLTH-340, HLTH-350, and BIO-132 or BIO-134. **R**

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HMON Hmong

HMON-121 Practical Hmong I 2 cr.
ESB Fall and Spring Semesters
Basic Hmong language and culture. Introduce Hmong Romanized alphabet, pronunciation, basic vocabulary words. Identify key elements of Hmong culture and kinship system. Learn basic conversation patterns and greetings. Equivalent to HMON-196.

HMON-122 Practical Hmong II 2 cr.
ESB Fall and Spring Semesters
Continuation of Practical Hmong I. Acquire skills in creative and spontaneous conversation and writing. Hmong history through refugee camps, and examine cultural patterns as they change from China to Laos and then to the United States. Equivalent to HMON-196A. Prerequisites: take HMON-121.

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HT Hospitality and Tourism

HT-100 Introduction To Hospitality (1 cr.)
GLP Fall and Spring
Exploration of the major components and organization structure of the hospitality industry. Presents historical development, opportunities and current trends. Stresses the importance and relationship of education and work experience to career success.

HT-130 Housekeeping Procedures (2 cr.)
Fall and Spring
Management principles applied to duties and responsibilities for hourly and management personnel in hotels, motels, institutions and other hospitality enterprises.

HT-133 Front Office Operations (3 cr.)
Fall and Spring
Principles required to organize and operate hotel or motel front office guest needs, salesmanship and procedures for different types of front office operations.

HT-135 Lodging Systems (3 cr.)
Fall and Spring
Examination of the basic skills needed in a lodging facility. Specific roles, functions, and policies pertaining to the Rooms Division.

HT-140 Introduction To Tourism (2 cr.)
GLP Fall, Spring and Summer
Principles and current knowledge of domestic and international tourism; benefits to community, area, state and nation; trends and potentials.

HT-150 Institutional Food Purchasing (2 cr.)
Fall and Spring
Methods of large-quantity food purchasing: determining standards, specific needs and industrial offerings; formulating specifications, buying procedures and controls.
Prerequisites: take FN-124 or FN-240.

HT-200 Hospitality Organization Management (3 cr.)
Fall and Spring
Management principles for hotels and restaurants, supervisory development and training, labor relations, managerial interpretation and evaluation of current systems and procedures.
Prerequisites: take HT-100.

HT-208 Hospitality Service Marketing (1 cr.)
Application of marketing to hospitality and tourism, including the relational aspects of service marketing management.

HT-240 Tourism Goods and Services (3 cr.)
GLP Fall and Spring
Analysis of tourism goods and services in relationship to future patterns of supply and demand.
Prerequisites: take HT-140 ECON-210.

HT-251 Hospitality Marketing and Sales (3 cr.)
Fall and Spring
Analysis of theories, fundamental principles and techniques of hospitality marketing and convention sales; functions, interrelationships and coordination of all hospitality departments and their roles in assuring success of marketing effort.
Junior Level or higher.

HT-270 Introduction To Property Management (2 cr.)
Fall, Spring and Summer
Management in commercial and multi-family property. Employees, management tools, government involvement, community development, clients, property law and tax requirements.

HT-315 Gaming Management (3 cr.)
Overview of casino gaming operations in the Hospitality and Tourism Industry form a global and local perspective. Must be 21 years or older. Junior level or higher.

HT-316 Casino Operations Management (3 cr.)
Fall and Spring
Functions and transactions associated with the gaming operations environment within a resort casino. Must be 21 years or older. Junior level or higher.

HT-317 Psychosocial Issues in Gaming (3 cr.)
Fall and Spring
A hospitality management and societal perspective of the pros and cons of gambling entertainment. Must be 21 years or older. Junior level or higher.

HT-323 Food Service Equipment (2 cr.)
Fall, Spring and Summer
Factors affecting design, selection, physical facilities and utilities involved in foodservice equipment.

HT-324 Quantity Food Production (4 cr.)
Fall, Spring and Summer
Quantity food production management concepts; menu planning, work production schedules, production analysis, food and labor cost controls, and sales projections, crisis and service management techniques; lab work in quantity food production and service; recipe development and introduction to productivity and work simplification concepts.
Prerequisites: take FN-124 or FN-240; and take FN-106 or FN-212.

HT-326 Introduction To Wines and Spirits (3 cr.)
GLP Fall, Spring and Summer
Applied and historical knowledge of wines and spirits from different regions of the world; emphasis on preparation, selection, accompaniment with food, basic cost control analysis and service. Must be 21 years or older. **$**

HT-330 Resort Planning and Operation (3 cr.)
Spring
Planning and operation of individual destination resorts. Analysis of resort concept, history, master planning, environmental impact, facility design, maintenance and operational management. Prerequisites: take HT-430. **$**

HT-335 Lodging Operations Management (3 cr.)
Fall and Spring
Investigation of supervisory roles in lodging management, with an emphasis on the importance of financial statements and

their interpretation, human resources and productivity, and providing quality hospitality services within all types of lodging facilities. Prerequisites: take HT-135.

HT-340 Development of Tourism Attractions (3 cr.)
Fall and Spring
Diversified natural and man-made background tourism elements (BTE): preservation and incorporation of concepts for development of tourism destinations.
Prerequisites: take
HT-140, ECON-210.

HT-341 Geography of Tourism (3 cr.)
GLP Fall and Spring
Locational analysis of land use and human migration in national and international tourism.
Prerequisites: take HT-140, HT-340.

HT-351 Hospitality Convention/Meeting Planning (2 cr.)
Fall, Spring and Summer
The roles and responsibilities of professional hospitality meeting planners and hotel convention sales/service managers are examined for purposes of planning or hosting a major convention, or a corporate, association, or special group meeting event.
Prerequisites: take HT-251.

HT-352 Club Management (3 cr.)
Fall
Managing a membership, city, health and fitness, military, golf, or other social or recreation club. Junior level or higher.

HT-353 Computer Systems For Food Service (3 cr.)
Fall, Spring and Summer
Functions of computers in a variety of food service operations with specific emphasis on spreadsheets and food service application software. Experience using state-of-the-art technology and microcomputers.
Prerequisites: take HT-324, HT-362.

HT-360 Hospitality and the Handicapped Traveler (1 cr.)
Fall and Spring
Provide increased sensitivity to needs of handicapped traveler; problems and possible solutions for hospitality organizations.

HT-361 Hospitality and Tourism Accounting (3 cr.)
Fall and Spring
Design and interpretation of specialized accounting and financial control systems in management decision making; uniform system of accounts, departmentalized costing procedures, statement analysis and interpretation.
Prerequisites: take BUACT-206.

HT-362 Food, Beverage and Labor Cost Controls (3 cr.)
Fall, Spring and Summer
The use of financial techniques and systems to control food, beverage, and labor costs in hospitality food service operations.

HT-370 Principles of Property Management (3 cr.)
Fall and Spring
Property management fundamentals. Topics include ownership goals, management direction, finance and maintenance of multi-family and commercial properties.

HT-371 Commercial/Residential Property Development and Management (3 cr.)
Spring
Exploring factors involved in developing and managing property, both residential and commercial, including undeveloped land. Topics include feasibility studies, financing, appraisal,
leases, purchase agreements and management contracts.
Prerequisites: take HT-370.

HT-373 Property Management Applications (2 cr.)
Fall and Spring
Lease management for residential, commercial, institutional, and industrial types of real property, computer based applications.
Prerequisites: take HT-270.

HT-382 Family Finance (2 cr.)
Fall and Spring
Financial decisions and judgments that average individuals and families must make during a lifetime; income and occupation, family expenditures, credit, savings, taxes and estate plans.
Prerequisites: take ECON-210.

HT-383 Yield Management (3 cr.)
Fall and Spring
Investigation of the use of computer technology in the lodging industry for revenue planning, scheduling and performance evaluation. Specialized software will be used to analyze and evaluate hotel performance.
Prerequisites: take HT-135, HT-200, STAT-130.

HT-418 Casino Tourism (3 cr.)
Fall and Spring
Research/travel and visits with Chambers of Commerce, casino management personnel, and governing entities to study economic, sociological and cultural impacts of gaming within a particular global or local region. Must be 21 years or older. Junior level or higher.

HT-423 Wine and Food Pairing (3 cr.)
GLP
Matching wine and food from different parts of the world using flavors, textures, and components present in food and wine as complementing strategies. Emphasis on menu planning, food preparation, cooking methods and wine tasting with foods.
Prerequisites: take HT-326. **$**

HT-424 Catering (3 cr.)
Fall and Spring
Theory and application of operational and managerial principles for on- or off-premise catering for special events. Junior level or higher.
Prerequisites: take FN-124, FN-260.

HT-426 Restaurant Operational Management (3 cr.)
Fall, Spring and Summer
Application of the principles of food and beverage management in full service restaurants existing as independent units or as units within a commercial/ noncommercial foodservice operation. The course will emphasize fine dining, fine cuisine and control systems.
Prerequisites: take FN-124, HT-324.

HT-427 Professionalism: Social & Work Environment(1 cr.)
The application of necessary skills to be professional in social and work environments with emphasis on professional dress, proper dining etiquette, business conversation, and job search techniques. **$**

HT-430 Lodging Administration (3 cr.)
Fall and Spring
Analysis of theories, principles and techniques of lodging management; problems and issues encountered by management in providing quality service within cost-efficient organization. Senior level or higher.
Prerequisites: take HT-383.

HT-440 Sociocultural Systems of Tourism (3 cr.)
Spring
Various psychosocial dimensions of tourism: motivation, development, community and conflict as related to consumer-tourists, tourisiers and residents. Senior level or higher.

HT-450 Food Service Administration (3 cr.)
Fall and Spring
Organization and administration of institutional foodservice systems, personnel selection and training, cost control and problems of supervision.

HT-454 Security and Risk Management For the Hospitality Industry (3 cr.)
Spring
Advanced investigation of security and risk management within hospitality/service industries. **$**

HT-457 Hospitality Management Strategies (3 cr.)
Fall, Spring and Summer
Comparison and synthesis of hospitality management strategies; concepts and theories in relationship to long-term hospitality business goals and objectives. Capstone course for senior-level hospitality and tourism students. Senior level or

higher.
Prerequisites: take HT-362.

HT-460 Hospitality Industry Law and Liability (3 cr.)
Fall and Spring
Laws applicable to ownership and operation of inns, hotels, motels, restaurants and other places of public hospitality.
Prerequisites: take BULGL-318.

HT-461 Hospitality Industry — Employee and Labor Relations (2 cr.)
Fall and Spring
Investigation of employee and labor relations in the hospitality industry; history, legality and techniques of dealing with unionization.

HT-462 Hospitality — Financial Analysis/Budget/ Forecasting (3 cr.)
Fall, Spring and Summer
Application of accounting and financial analysis techniques to managerial decision-making in hospitality industry.
Prerequisites: take BUACT-206, HT-361, and HT-362.

HT-470 Seminar in Property Management (2 cr.)
Spring
Culminating professional course for the property management minor program. Preparation of a property management plan for a specific property. Discussion of current trends and industry problems. For Property Management minors.

HT-480 Consumer Credit 1 cr.)
Types and sources of credit, determination of credit costs, considerations before using, and regulatory laws.
Prerequisites: take HT-380.

HT-481 Special Problems in Hospitality and Tourism (1-3 cr.) **R**

HT-482 Consumer Protection 1 cr.)
Spring
Major federal and state consumer protection agencies; major business, industry and private organizations set up to aid consumers; avenues of individual and collective consumer redress.

HT-488 Financial Planning For Retirement (2 cr.)
Fall and Spring
Financial considerations made in preparing for and during retirement. Emphasis on the values, goals, income, expenditures, credit, savings, investments, taxes and estate plans.

HT-492 Seminar in Hospitality and Tourism Management (3 cr.)
An advanced course in management. The student will select and research a current topic of importance to the industry. **R$**

HT-498 Hospitality and Tourism Field Experience (1-2 cr.)
Fall, Spring and Summer
Off-campus work and study in an approved position to better understand the challenges and potentials of various careers in the hospitality area. Must have 90 credits completed.

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INMGT Industrial Management

INMGT-100 Introduction To Industrial Management (1 cr.)
Fall
Survey of history, philosophy, and future of industrial management focusing on changes, challenges, opportunities, and industrial management's role in business and industry.

INMGT-120 Quality Concepts (3 cr.)
Fall, Spring and Summer

An introduction to quality, quality systems, and quality management through a survey of the various philosophies, principles, techniques and procedures used by various organizations and/or managers to assure customer satisfaction of product and/or service.

INMGT-200 Production and Operations Management (3 cr.)
Fall, Spring and Summer
A broad analytical "systems" viewpoint is used to develop competency in management decision-making and problem solving in an operations setting.
Prerequisites: take STAT-130, STAT-330 or STAT-320.

INMGT-210 Service Operations Management (3 cr.)
Examination of the environment in which services operate. The design of service delivery systems is addressed from the perspective of both customer participation and operations efficiency.

INMGT-220 Service Quality Assurance (3 cr.)
Determination of goals, management systems, and implementation methodologies for all aspects of service organization quality assurance.

INMGT-298 Field Experience (1-2 cr.)
Fall, Spring and Summer
Off-campus work and study in an approved position to better understand business and industrial concepts and practices. **R**

INMGT-300 Engineering Economy (2-3 cr.)
Fall, Spring and Summer
Source and application of funds: cost control, valuation, depreciation, replacement theory and taxation.

INMGT-301 Seminar (1-2 cr.)
Fall and Spring
(Title will reflect specific business or management content.) Current topics in business and industrial management to meet specific needs of students enrolled. **R**

INMGT-305 Product and Inventory Control (3 cr.)
Fall and Spring
Principles and techniques of minimizing cost of ordering, receiving, storing, issuing, scheduling, routing, dispatching, expediting, and controlling material, parts, sub-assemblies, and final assemblies of a manufacturing system.
Prerequisites: take INMGT-200, and take STAT-130 or STAT-320.

INMGT-310 Production Processing (3 cr.)
Fall and Spring
Production processes, especially product design as related to economic production; factors that influence choice and sequence of process to obtain end product. Prerequisites: take INMGT-200.

INMGT-314 Industrial Enterprise Practicum (3 cr.)
Fall, Spring and Summer
Organization and operation of an industrial company; election, designing, production planning, production, marketing and distribution of a product.

INMGT-320 Quality Tools (3 cr.)
Fall, Spring and Summer
Practical and statistical quality control in design and use of quality assurance programs: quality engineering, manufacturing quality assurance and product quality assurance.
Prerequisites: take INMGT-120, STAT-130.

INMGT-325 Quality Management (3 cr.)
Fall, Spring and Summer
Provides the managerial and technical knowledge necessary to prepare, document, manage, and evaluate quality systems from beginning design through system operation and post-delivery customer services within a product or service environment.
Prerequisites: take INMGT-120.

INMGT-340 Time and Motion Study (1-3 cr.)
Fall, Spring and Summer
Methods design and work measurement. Development of work methods by applying motion analysis, charting techniques,

principles of motion economy, and work station design. Includes direct stopwatch methods, predetermined time systems, and standard data. Managerial implications for labor relations considered. Prerequisites: take INMGT-200.

INMGT-350 Facilities Planning (3 cr.)
Fall and Spring
Study of facilities location, structure, and planning for efficient layout and material handling systems. Prerequisites: take INMGT-200.

INMGT-360 Benchmarking in Business and Industry (1 cr.)
WinTerM
Theory, benefits and procedures of successful benchmarking, including the related legal and ethical issues.
Prerequisites: take INMGT-200.

INMGT-365 Project Management (2 cr.)
Spring
Planning, scheduling, and control of technical projects. Topics covered include activity identification, network diagrams, scheduling, PERT/CPM, cost analysis, resource management, and computer control.

INMGT-370 Industrial Management Issues Seminar (2 cr.)
Fall and Spring
Current and emerging trends and issues in industrial management for students with a technical background who are preparing and planning for a career in leadership and management positions. 12 earned UW-Stout credits.

INMGT-400 Organizational Leadership (3 cr.)
ESC Fall, Spring and Summer
Overview of the leader's role in accomplishing organizational objectives through the management of human resources. Concepts of organizational and individual behavior serve as a foundation for the development of such leadership skills as communication, motivation, initiating change, team building, delegation, building credibility, and conflict management.
Senior level or
higher.

INMGT-401 Management Consulting (2 cr.)
Fall and Spring
The organization and analysis of major elements of the consulting profession in management: 1) subject matter expertise, 2) marketing, 3) organizational development, 4) business principles for consultants and 5) communication skills; synthesis of the interdependent relationship of the major elements in the consultation process.

INMGT-405 Production and Inventory Control Practicum (2 cr.)
Application of principles and techniques learned in INMGT-305 as part of professional semester/ manufacturing laboratory.
Prerequisites: take INMGT-305.

INMGT-410 Six Sigma Quality Improvement Methods (3 cr.)
Overview of Six Sigma quality improvement applications. Application of scientific methods to improve quality of products, service, processes, and management systems. Prerequisites: take INMGT-320, INMGT-325.

INMGT-415 Women and Minorities in Management (2 cr.)
ESB Fall
An examination of current status of women and minorities in management positions such as managerial styles of women and minorities, specific leadership techniques, and changing and leading organizations to minimize discrimination.
Prerequisites: take 1 option: take SOC-110 and INMGT-400, or take SOC-110 and BUMGT-304.

INMGT-416 People Process Culture (3 cr.)
Fall and Spring
A study of high performing people process culture organizations integrating sociology, applied psychology, and organization behavior subject matter areas.
Prerequisites: take BUMGT-304, and take PSYC-382 or INMGT-400.

INMGT-420 Quality Assurance – Practicum (3 cr.)
Application of principles and techniques learned in INMGT-320, as part of professional semester/ manufacturing laboratory.
Prerequisites: take INMGT-320, INMGT-325.

INMGT-422 Quality Engineering (3 cr.)
Fall and Spring

Practical and statistical engineering methods to improve quality, reliability and design in a manufacturing environment. Prerequisites: take INMGT-200, STAT-330; minimum grade C.

INMGT-430 Employee Involvements: Work Teams (2 cr.)
Summer
Background and history of employee involvement, teams as a method of employee involvement, analysis of the advantages and disadvantages of different team structures and the planning processes used to implement team structures, analysis of situational variables used to help design the best team approach for an organization, the support systems needed to maintain teams, phases of team development, facilitation skills, and team problem-solving methods. Senior level or
higher.

INMGT-435 Facilities and Material Handling Systems Design (2 cr.)
Fall and Spring
Analysis and design of facilities and material handling systems. Includes plant layout and material handling principles and equipment. For Manufacturing Engineering majors only.
Prerequisites: take INMGT-200; minimum grade C.

INMGT-450 Maintenance Management (2 cr.)
Fall, Spring and Summer
Organization and management of facilities management system: administration of maintenance forces, maintenance of personnel, planning and scheduling of work, maintenance of basic environmental systems, project control and cost control for maintenance operations.

INMGT-460 Industrial Management (2 cr.)
Summer
Principles and methods of analyzing and solving industrial problems; application through case studies, management games and special problems. Senior level or higher.

INMGT-480 Production Systems Planning (2 cr.)
Fall and Spring
Plan of manufacturing systems utilizing contemporary techniques, such as: employee involvement, value analysis, compatibility with facilities and equipment, reliability, material requirements, scheduling, and risk control. Prerequisites: take INMGT-422.

INMGT-485 Production Management Practicum (2 cr.)
Fall and Spring
Application of principles and techniques of analyzing and solving production management problems learned in prior course work to manufacturing project in manufacturing laboratory. Instructor's consent required.

INMGT-489 Business and Industrial Intern (1-8 cr.)
Fall, Spring and Summer
Off-campus work and study in student's area of concentration; approved salaried position with cooperating company for a semester or summer session. Junior level or higher. **R**

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LIT Literature

LIT-203 American Poets (3 cr.)
HUM/LIT ESB
Contemporary American writers of narrative, dramatic and lyric poetry.
Prerequisites: take ENGL-102 ENGL-112 or ENGL-113.

LIT-205 The Short Story (3 cr.)
HUM/LIT Fall
Style, structure, history and development of short story as a literary form.
Prerequisites: take ENGL-102 ENGL-112 or ENGL-113.

LIT-208 Fiction Into Film (3 cr.)
HUM/LIT ESC Fall and Spring
Selected works of literature and their film adaptations. Prerequisites: take ENGL-102 ENGL-112 or ENGL-113.

LIT-230 American Cinema (3 cr.)
HUM/LIT ESB
A literary and cultural examination of the development of cinema in the United States with special attention to the evolution of the cinematic treatment of non-dominant cultural groups.
Prerequisites: take ENGL-102 ENGL-112 or ENGL-113.

LIT-250 Classical and Biblical Literature in Translation (3 cr.)
HUM/LIT Fall and Spring
Selections from Greek, Hebrew and Latin literature.
Prerequisites: take ENGL-102 ENGL-112 or ENGL-113.

LIT-255 Recent World Literature (3 cr.)
HUM/LIT GLP
Selected readings in Contemporary Literature in Translation.
Prerequisites: take ENGL-102 ENGL-112 or ENGL-113.

LIT-260 Modern American Literature (3 cr.)
HUM/LIT ESB
Fall, Spring and Summer
Selected poetry, prose and drama produced since World War I.
Prerequisites: take ENGL-102 ENGL-112 or ENGL-113.

LIT-272 Women Writers (3 cr.)
HUM/LIT GLP Fall
Analyze writing of prominent American and British women novelists and poets of l9th and 20th centuries; criticism of women writers.
Prerequisites: take ENGL-102 ENGL-112 or ENGL-113.

LIT-273 American Multicultural Literature (3 cr.)
HUM/LIT ESA Fall, Spring and Summer
American multicultural literature, focusing on Hispanic, African, Asian, and Native American writers.
Prerequisites: take ENGL-102 ENGL-112 or ENGL-113.

LIT-280 Best-Sellers (3 cr.)
HUM/LIT Fall and Spring
Fiction and non-fiction best-sellers: expression of and impact on popular culture.
Prerequisites: take ENGL-102 ENGL-112 or ENGL-113.

LIT-281 Recent American Literature (3 cr.)
HUM/LIT ESB Spring
American poetry, fiction and drama since 1950.
Prerequisites: take ENGL-102 ENGL-112 or ENGL-113.

LIT-285 Science Fiction (3 cr.)
HUM/LIT
Critical survey of popular and classic science fiction.
Prerequisites: take ENGL-102 ENGL-112 or ENGL-113.

LIT-286 Detective Fiction (3 cr.)
HUM/LIT
Literary, historical and social implications of detective fiction from its inception to the present. Includes popular writers, literary writers, non-print media and criticism.
Prerequisites: take ENGL-102 ENGL-112 or ENGL-113.

LIT-300 Children's Literature (3 cr.)
HUM/LIT ESB
Fall and Spring
Critical survey and ways of presenting literature for children from infancy to age 12.
Prerequisites: take ENGL-102 ENGL-112 or ENGL-113.

LIT-301 English Literature (3 cr.)
HUM/LIT Spring
Selected prose and poetry from 1798 to modern times.
Prerequisites: take ENGL-102 ENGL-112 or ENGL-113.

LIT-302 Topics in Literature (1 cr.)
HUM/LIT
Intensive analysis of selected authors and literary works with emphasis on discourse analysis in group and workshop settings.
Prerequisites: take ENGL-102 ENGL-112 or ENGL-113. **R**

LIT-304 American Folklore (3 cr.)
HUM/LIT ESB Fall and Spring
Analysis and interpretation of stories, songs, jokes, and material culture of families, work groups, ethnic groups, and religious groups.
Prerequisites: take ENGL-102 ENGL-112 or ENGL-113.

LIT-306 Shakespeare (3 cr.)
HUM/LIT Spring
Several representative plays and selected criticism.
Prerequisites: take ENGL-102 ENGL-112 or ENGL-113.

LIT-350 Modern British Literature (3 cr.)
HUM/LIT GLP
Fall and Spring
Selected poetry, prose, and fiction produced since World War I.
Prerequisites: take ENGL-102 ENGL-112 or ENGL-113.

LIT-450 Studies in Literature (theme, Author, Genre) (2-3 cr.)
HUM/LIT Fall and Spring
A study of a selected writer's work or of literature focusing on a significant theme of literature or of a genre not offered as a distinct course of similar duration within the departmental curriculum.
Prerequisites: take ENGL-102 ENGL-112 or ENGL-113. **R**

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LOG Logic

LOG-250 Critical Thinking 3 cr.
Fall, Spring and Summer
Formulation, clarification and critical evaluation of claims: justification through non-formal argumentational strategies. Equivalent to 365-250.

LOG-301 Introduction to Logical Thinking 3 cr.
ANRSN LOGIC Fall and Spring Semesters
Problem-solving strategies based on induction and on categorical and propositional deduction. Equivalent to 365-301.

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MATH Mathematics

MATH-010 Fundamentals of Algebra 2 cr.
Fall and Spring Semesters

Review of fundamental principles of elementary algebra. Credit earned for MATH 355-010 will not count toward graduation. Equivalent to 355-010.

MATH-110 Intermediate Algebra 4 cr.
Fall and Spring Semesters
Basic algebraic skills: factoring, exponents, rational expressions, linear equations and inequalities, systems of equations, quadratic equations, and an introduction to functions. One year of high school algebra and math placement test is required, or MATH-010. Equivalent to 355-110, 355-196D.

MATH-118 Concepts of Mathematics 4 cr.
ANRSN MATH Fall, Spring and Summer
Elementary concepts in mathematical language and reasoning, sets, number systems and theory, algebraic equations, statistics and probability, geometry, computers; historical survey. One year of high school algebra and math placement test required, or Math-010. Equivalent to 355-118.

MATH-119 Business Mathematics 4 cr.
Fall, Spring and Summer
Review of arithmetic and basic algebra; simple and compound interest, inventory control and purchase planning; applications to retailing, marketing, accounting, finance, consumerism and insurance. Equivalent to 355-119.

MATH-120 Introductory College Mathematics I 4 cr.
ANRSN MATH Fall, Spring and Summer
Review of basic algebra, solving equations and inequalities, applications of equations and inequalities, functions and their graphs, polynomial equations, and systems of equations. Math placement test required, or MATH-110.
Equivalent to 355-120.

MATH-121 Introductory College Mathematics II 4 cr.
ANRSN MATH Fall and Spring Semesters
Continuation of MATH-120. Study of functions to include rational, exponential, logarithmic, and trigonometric functions and two dimensional analytic geometry. Math placement test required or MATH-120. Equivalent to 355-121.

MATH-123 Finite Mathematics With Applications 4 cr.
ANRSN MATH
Real number system, systems of linear equations and inequalities, sets, functions, vectors, matrices, probability, linear programming, theory of games, Markov chains. Math placement test required, or MATH-110 or MATH-120.
Equivalent to 355-123.

MATH-152 Calculus for Management and the Social Sciences 4 cr.
ANRSN MATH Fall, Spring and Summer
Basic concepts of calculus with applications in the managerial and social sciences. Equivalent to 355-152. P: MATH-123.

MATH-153 Calculus I 4 cr.
ANRSN MATH Fall, Spring and Summer
Functions, limits, continuity, bounds, sets; the derivative of functions and applications; exponential, logarithmic, trigonometric and inverse functions. Not open to those with credit in MATH-154, MATH-156, MATH-157 or MATH-158. Math placement test required, or Math-121. Equivalent to MATH-156, 355-156, 355-153, MATH-157, 355-157, MATH-158, 355-158.

MATH-154 Calculus II 4 cr.
GEANRSN MATH Fall and Spring Semesters
Continuation of MATH-153: antiderivatives; integration theory and techniques, applications; parametric equations, vectors. Equivalent to MATH-157, 355-157, 355-154, MATH-156, 355-156. P: MATH-153 or MATH-156.

MATH-156 Calculus and Analytic Geometry I 5 cr.
GEANRSN MATH Fall Semester
Review of real numbers, inequalities, absolute values, intervals and continuity; analytic geometry of the plane, limit concepts, derivatives of algebraic functions, definite integral. Math placement test required, or MATH-121. Equivalent to MATH-153, 355-156, 355-153, MATH-154, 355-154.

MATH-157 Calculus and Analytic Geometry II 5 cr.
ANRSN MATH Spring Semester
Application of derivative and definite integral; conic sections and other algebraic curves; calculus for rational, algebraic, circular, exponential and trigonometric functions; formal integration. Equivalent to MATH-154, 355-157, 355-154, MATH-153, 355-153. P: MATH-156.

MATH-158 Calculus III 3 cr.
Fall and Spring Semesters
Formal integration continued; parametric equations, polar representation, Cauchy's formula, Taylor's theorem, infinite series, vectors, partial differentiation, multiple integration.
Equivalent to MATH-153, 355-153, 355-158. P: MATH-154 or MATH-157.

MATH-250 Differential Equations With Linear Algebra 3 cr.
Fall and Spring Semesters
Differential equations: first-order and higher-order equations, systems of linear differential equations. Linear algebra: matrices, determinants, systems of linear equations, vector spaces, linear transformations, eigenvalues, eigenvectors.
Equivalent to 355-250, 355-265, MATH-255, 355-250, 355-255. P: MATH-154 or MATH-157.

MATH-255 Differential Equations 3 cr.
Fall and Spring Semesters
Common types of ordinary differential equations of first and second order; linear equations with constant coefficients; series solutions, numerical approximations, systems of ordinary equations.
Equivalent to MATH-250, 355-250, 355-255. P: MATH-154 or MATH-157.

MATH-262 Modern Geometry 3 cr.
Spring Semester
Development of logical discourse, betweenness properties and plane separation, geometric models of axiomatic systems, modern geometry of triangle and circle, transformations (linear, circular), orthogonal systems of circles, elliptic and hyperbolic geometry. Equivalent to 355-262. P: MATH-153 or MATH-156.

MATH-275 Linear Algebra 3 cr.
Fall and Spring Semesters
Algebra of linear transformations and matrices. Determinants, equivalence relations, rank systems of equations, vector spaces, orthogonal transformations, characteristic equations and quadratic forms. Equivalent to 355-275. P: MATH-153 or MATH-156.

MATH-350 Vector Analysis 3 cr.
Fall, Spring and Summer
Basic theory of vectors. Vector differential calculus and vector integral calculus of two and three dimensions with applications. Equivalent to 355-350. P: MATH-158.

MATH-370 Modern Algebra I 3 cr.
Fall Semester
Set theory, mappings, equivalence relations and classes, mathematical induction, Peano's postulates, isomorphisms; development of natural numbers, integers, rational, and real numbers; introduction to integral domains and rings.
Equivalent to 355-370. P: MATH-154 or MATH-157.

MATH-371 Modern Algebra II 3 cr.
Spring Semester
Continuation of 355-370; rings, integral domains, fields, polynomials, groups, vector spaces; introduction to algegra of matrices.
Equivalent to 355-371. P: MATH-370.

MATH-450 Real Analysis I 3 cr.
Fall Semester
Rigorous development of advanced topics in analysis; functions, real numbers, sequences, Cartesian spaces, sequences of functions, limit superior and inferior, continuous functions.
Equivalent to 355-450. P: MATH-154 or MATH-157.

MATH-451 Real Analysis II 3 cr.
Spring Semester
Continuation of 355-450; differentiation, integration, infinite series. Equivalent to 355-451. P: MATH-450.

MATH-460 Complex Variables With Applications 3 cr.
Spring Semester
Complex numbers, analytic functions, elementary functions of complex variables, mapping of elementary functions, integration techniques, power series and calculus of residues. Equivalent to 355-460. P: MATH-255.

MEBE Marketing Education/Business Education

MEBE-101 Introduction To Marketing and Business Education (3 cr.)
Fall and Summer
Philosophy of marketing and business education programs; curriculum offerings; the job of a marketing and business educator: planning, guidance, public relations activities, administrative responsibilities; legislation affecting marketing education, adult marketing and business education offerings, and evaluation of marketing and business education programs.

MEBE-202 Supervision of Business and Marketing Vocational Student Organizations (3 cr.)
Fall
Provides competencies needed to become a successful advisor and to integrate a marketing and/or business education vocational student into curriculum with focus on the high school division of the BPA, FBLA, and DECA.

MEBE-301 Marketing Education Methods (3-4 cr.)
Fall
Techniques and methods of delivering marketing education: Lecture, projects, individualized instruction, demonstration, instructional resource materials, and integration of DECA and Coop instructional activities. Education Majors:Benchmark I completed.
Prerequisites: take EDUC-312, MEBE-201, MEBE-202.

MEBE-311 Marketing Education Project Method (2 cr.)
Fall
Designed to develop methods, techniques, activities and resources that center around teaching marketing education via the project method or model store simulation. Education Majors: Benchmark I completed.
Prerequisites: take MEBE-201, MEBE-202, MEBE-312. Corequisite courses: MEBE-312.

MEBE-312 Pre-Clinical Experience: Marketing Education (1 cr.)
Fall
Pre-Student teaching experience by designing, delivering and evaluating lessons in a high school setting in conjunction with MEBE-311 Marketing Education Project Method. Education Majors: Benchmark I completed.
Prerequisites: take MEBE-201, MEBE-202, MEBE-311. Corequisite courses: MEBE-311.

MEBE-355 Marketing and Business Education Seminar (2-3 cr.)
Designed to update marketing and business education students on issues and trends in vocational business and marketing education. **R**

MEBE-401 Marketing Education Curriculum (2-3 cr.)
Fall
Introduction to curriculum development for students who are preparing to become teacher- coordinators of marketing education. Includes an update on current issues and trends in marketing education curriculum, development of a specific curriculum unit, and competency-based instruction. Education Majors: Benchmark I completed.
Prerequisites: take MEBE-201, MEBE-202, MEBE-301, MEBE-311, and EDUC-312.

MEBE-408 Marketing Education Student Teaching (8 cr.)
Fall and Spring
Directed teaching and community experiences in selected off-campus schools (quarter).

MEBE-409 Marketing Education — Student Teaching (2-16 cr.)
Spring
Directed teaching and community experiences in selected off-campus schools. Senior level or higher. Satisfactory Health, Speech and English. Minimum Cumulative GPA 2.75.
Prerequisites: take MEBE-201, MEBE-202, MEBE-301, MEBE-401, and MEBE-312.

MEBE-411 Business Education Methods and Curriculum (5 cr.)
Fall, Spring and Summer
Teaching methods and curriculum design for business educators. Emphasis on basic business subjects; business literacy and entry-level job preparation; issues and trends; microteaching; development of a competency-based basic business

education curriculum unit. Education Majors: Benchmark I completed.
Prerequisites: take MEBE-201, MEBE-202.

MEBE-412 Elementary Keyboarding Teaching Methods (1 cr.)
Summer
Developmentally appropriate methods of instruction in keyboarding and emerging input technologies applicable to elementary educational settings.
Prerequisites: take MEBE-411.

MEBE-419 Business Education Student Teaching (2-8 cr.)
Fall and Spring
Directed teaching and community experiences in selected off-campus schools. School of Education permission required.
Prerequisites: take MEBE-201, MEBE-202, MEBE-411.

MEBE-488 Marketing Education-Internship (8-16 cr.)
Fall and Spring
Directed teaching and community experiences in selected off-campus schools. Admission to Student Teaching.

MEBE-489 Business Education Internship (8-16 cr.)
Spring
Directed teaching and community experiences in selected off-campus schools.

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MECH Engineering Mechanics

MECH-290 Mechanics of Solids I 3 cr.
Fall and Spring Semesters
Technical calculations, dimensional analysis, freebody diagrams, force systems and equilibrium, friction, elementary statically determinate framed structures, and simple stress.
Equivalent to 130-290, 183-290. P: PHYS-231, PHYS-241 or PHYS-281.

MECH-291 Mechanics of Solids II 3 cr.
Fall and Spring Semesters
Stress and strain, torsion, bending of beams, compound stress, principal stress, deflection of beams, statically indeterminate members and columns.
Equivalent to 130-291, 183-291. P: MECH-290 or PHYS-331.

MECH-293 Engineering Mechanics 3 cr.
Fall Semester
Force systems and equilibrium in two and three dimensions, free body diagrams, trusses, frames, friction, kinematic analysis of particle and rigid body translation, rotation, and general plane motion, force-acceleration analysis, work-energy analysis, impulse momentum analysis, impact, damped and undamped vibrations, and forced vibrations.
Equivalent to 183-293, 183-296. P: PHYS-281.

MECH-294 Mechanics of Materials 3 cr.
Spring Semester
Stress and strain, stress-strain curves, material properties, stress and strain transformation, axially loaded members, elastic and inelastic flexure, shear and bending moment diagrams, beam deflections, combined loading, fatigue, column buckling. Equivalent to 183-294. P: MECH-293; minimum grade of C.

MECH-298 Field Experience 1-2 cr.
Fall, Spring and Summer
Equivalent to MECH-294, 183-294, 183-298.

MECH-332 Mechanical Design 4 cr.
Spring Semester
Analysis and design of machine elements: gearing bearings, shafting and friction devices. Equivalent to 183-532.

MECH-337 Mechanical Design Drafting 2 cr.
Fall Semester
Design of a machine, specifications, layout, calculations, bills of material, detail and assembly drawings. Equivalent to 130-537, 183-537. P: CADD-113, MECH-332.

MECH-392 Mechanics of Machinery I 3 cr.
Spring Semester
Dynamics of machinery: rectilinear and curvilinear motion; translation and rotation of a rigid body, force-acceleration equation, impulse and momentum; work, power and energy; balancing and vibration. Equivalent to 130-592, 183-592. P: MECH-290 or PHYS-331; and MATH-153.

MECH-393 Mechanics of Machinery II 3 cr.
Fall Semester
Graphical analysis and synthesis of linkages, cams, gear trains, displacement, velocity, acceleration and dynamic forces. Equivalent to 130-593, 183-593.

MECH-398 Field Experience 1-2 cr.
Fall, Spring and Summer. Equivalent to 183-398.

MECH-498 Field Experience 1-2 cr.
Equivalent to 183-498, RD-498.

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MEDIA Media Technology

MEDIA-204 Exploring Photography (3 cr.)
HUM CRPRF
Fundamentals of both digital and conventional photography involving composition, aesthetics, photographic theory, camera operations, film selection/development, exposure controls,
editing/enlargement, presentation/display, introduction to color, and basic electronic imaging. Students must provide their own 35mm camera.

MEDIA-335 Film-History and Appreciation (3 cr.)
Fall
Evolution of motion picture film as medium of mass communication and aesthetic expression; contributions of noted film producers.

MEDIA-360 Introduction To Media in Education and Training (2 cr.)
Fall, Spring and Summer
Use of media in education and training. Includes the production of media and instructional materials in print, video, computer-bases and multimedia formats.

MEDIA-365 Integrated Software Applications For Instruction (3 cr.)
Spring and Summer
Software applications for the professional and personal use of instructors. The effective use of word processing, spreadsheet, database, presentation, communication and other appropriate software applications with emphasis on curricular integration and professional standards.
Prerequisites: take TCS-103.

MEDIA-366 Integrated Media Applications For Instruction (3 cr.)
Prepares instructors to use various media in the learning environment. Emphasis on proper curriculum integration based on sound curriculum design principles and professional standards. Instructor's consent required. Prerequisites: take MEDIA-365.

MEDIA-370 Computer-Assisted Interactive Video (3 cr.)
Summer

Design, production and evaluation of interactive video applications. Analysis of various hardware and software systems. Instructor's consent required.

MEDIA-400 Workshop (1-3 cr.)
Fall, Spring and Summer
Special topics in media technology providing hands-on or experiential learning activities. Specific content and title to reflect the topic of the workshop. **R**

MEDIA-405 Advanced Photography (2-3 cr.)
Fall, Spring and Summer
Advanced monochromatic photography: aesthetics, advanced theory, view-camera techniques, studio lighting, materials and equipment selection, sheet-film processing, specialized processes and techniques.
Prerequisites: take MEDIA-304. **$**

MEDIA-410 Product Photography (3 cr.)
Fall, Spring and Summer
Photography of natural and manufactured products for illustration, documentation, catalog and aesthetic purposes. Studio and field shooting, lighting for various product characteristics and locations, markets and market requirements, photographer-client relations, legal issues. 35mm single lens reflex, medium format, view or adjustable digital (3 megapixel minimum) camera required.
Prerequisites: take MEDIA-204.

MEDIA-412 Nature Photography(3 cr.)
Fall, Spring and Summer
Fundamentals of conventional and digital photography, camera techniques, composition, aesthetics, exposure, and light in relation to animals, plants, water, weather and landscapes. Emphasis on appropriate photographic equipment and field techniques for nature photography. Student must provide an adjustable camera.
Prerequisites: take MEDIA-204. **$**

MEDIA-414 Slide Duplication and Copystand Techniques (1 cr.)
Summer
Selection and use of equipment for copystand work and slide duplication; discussion of and practice with filters and multiple exposures.
Prerequisites: take MEDIA-204.

MEDIA-430 Digital Audio and Video Production Fundamentals (3 cr.)
Fall and Summer
A survey of digital audio and video production fundamentals with emphasis on workflow, digital capture, editing and manipultation and delivery alternatives.

MEDIA-440 Telecommunication Systems and Teleconferencing (2 cr.)
Fall, Spring and Summer
Interactive teleconferencing techniques. Applications, effective utilization and cost- effectiveness of information distribution systems, including telephone, television, teletext, videotest, viewdata, cable TV, slow-scan TV, and computers. Survey of transmission systems, including telephone lines, satellites, coaxial cable, microwave and fiber optics.

MEDIA-445 Color Photography $ (2-3 cr.)
Fall, Spring and Summer
Aesthetics, color theory, film selection, lighting, copy techniques, slide duplication, reversal and negative color film processing, and color printing.

MEDIA-450 Digital Photography (3 cr.)
Fall, Spring and Summer
A survey of digital photography with emphasis on image capture, manipulation, output, aesthetics. Ethical standards and legal issues as applied to digital photography. Adjustable camera required. Prerequisites: take MEDIA-204.

MEDIA-454 Small Format Video Production (1 cr.)
Summer
Selection of small format video systems to meet varied production needs. Planning and shooting video programs using BETA or VHS camcorders or 8mm equipment. Participants must provide their own personal or institutional video equipment.

MFGE Manufacturing Engineering

MFGE-106 Impacts of Engineering Design (2 cr.)
TECH GLP Fall, Spring and Summer
Investigation and exploration into past and present practices of engineering design and the resulting impacts on people, society,and the environment.

MFGE-145 Introduction to Manufacturing Engineering (1 cr.)
Fall
Introduction to Manufacturing Engineering as a profession. Presentation of the umbrella of engineering disciplines involved in manufacturing engineering.

MFGE-275 Thermodynamics and Heat Transfer (2 cr.)
Fall and Spring
Application of thermodynamics and heat transfer fundamentals to the design and analysis of manufacturing processes and systems.
Prerequisites: take PHYS-281, MATH-250; minimum grade C.
Corequisite course: MATH-250.

MFGE-320 Material Removal Processes (3 cr.)
Spring
Analysis and application of primary and secondary processing and post-processing methods used to manufacture products made from a broad spectrum of materials. The focus is on processes that shape materials by traditional and non-traditional material removal techniques. Measurement principles and practice are encountered in hands-on part machining and inspection. Prerequisites: take CHEM-341, MECH-293, CADD-113 and STAT-330; minimum grade C.

MFGE-325 Computer Aided Manufacturing for Manufacturing Engineers (3 cr.)
Fall, Spring and Summer
Effects of product mix and demand patterns on manufacturing system design and selection of process control methods. Introduction to quick changeover strategies and reprogrammable automation including numerically controlled machine tools, robotics, group technology, CAD/CAM, automated inspection and other computerized processing techniques.
Prerequisites: take MFGE-320 and CADD-113; minimum grade C.

MFGE-333 Polymer Processes (3 cr.)
Fall and Spring
Polymer materials and properties, material testing, product design and evaluation, tooling components, processing methods, machine setup and operation.
Prerequisites: take MECH-293, STAT-330 and MFGE-275; minimum grade C.

MFGE-343 Metal Casting, and Ceramic and Powder Metal Processes (2-3 cr.)
Fall and Spring
Theory and practice of industrial metal casting, ceramic forming and powder metallurgy processes. Prerequisites: take MFGE-275, MECH-294, CHEM-341 and STAT-330; minimum grade C.

MFGE-359 Bulk and Sheet Forming Processes (3 cr.)
Fall and Spring
Prerequisites: take MECH-294, CHEM-341, STAT-330 and MFGE-275; minimum grade C.

MFGE-363 Controls and Instrumentation (3-4 cr.)
Fall and Spring
Programmable logic controllers, structured ladder logic developments, input/output module description, and interfacing with analog and digital sensors and actuators. Motion, temperature, pressure and flow sensors. Advantages of closed loop control, mathematical modeling of electric and mechanical systems, stability analysis and frequency response. Introduction to motion control.
Prerequisites: take ELEC-290 and MATH-250; minimum grade C.

MFGE-375 Joining and Fastening (4 cr.)
Spring
Welding of metals, ceramic, and plastic. Brazing and soldering of appropriate metals, set up and operate welding

equipment. Thermal effects and destructive testing. Evaluation of adhesives and mechanical fasteners. Welding codes and ASTM standard comparative processing cost.
Prerequisites: take MECH-294, CHEM-341, MFGE-275 and STAT-330; minimum grade C.

MFGE-383 Coating, Finishing and Packaging (3 cr.)
Fall and Spring
Coating, finishing, and packaging materials and processes. Concurrent product design and development.
Prerequisite: take MFGE-275; minimum grade C.

MFGE-391 Fluid Mechanics (2 cr.)
Fall, Spring and Summer
Fundamental fluid mechanics is presented. Fluid power components and measurement systems are presented. Fluid power systems are mathematically modeled. Fluid power circuits and circuit schematics are designed and analyzed. Fluid power dynamic behavior, in general terms, is discussed.
Prerequisite: take MFGE-363; minimum grade C.

MFGE-395 Seminar (1-2 cr.)
Fall and Spring
Title will reflect specific manufacturing content.

MFGE-405 Capstone I: Concurrent Design (2-3 cr.)
Fall, Spring and Summer
Concurrent product design and development. Concept of design; brainstorming, problem solving, and creativity methods. Engineering methods. Design analysis, solid modeling, finite element analysis and information sources. Development of teamwork and communications skills. Consideration of cell needs and limitations.
Prerequisites: take MFGE-375 MFGE-359 MFGE-320, MFGE-333, MFGE-343 and MFGE-441; minimum grade C.

MFGE-407 Flexible Manufacturing Systems (4 cr.)
Fall and Spring
Specifications, planning, purchasing decisions, and programming of industrial robots in cellular and lean manufacturing systems, with emphasis on equipment selection.
Prerequisite: take MFGE-325; minimum grade C.

MFGE-410 Capstone II: Manufacturing System Design (3 cr.)
Fall and Spring
Dedicated and flexible manufacturing systems through the design, building and testing of a flexible manufacturing cell that produces a discrete family of parts, design of part transfer, tooling, sensing, production control and integrated inspection systems will be emphasized.
Prerequisite: take MFGE-383, MFGE-405, MFGE-407and MFGE-391; minimum grade C.

MFGE-440 Manufacturing System Design and Simulation (3 cr.)
Fall, Spring and Summer
Manufacturing system design using group technology and other techniques. System design evaluation using simulation software and other analysis tools and methods.
Prerequisites: take MFGE-325 and STAT-330; minimum grade C.

MFGE-441 Design of Jigs, Fixtures, and Tooling (3 cr.)
Fall, Spring and Summer
Design of tooling used for machining, locating and transferring multiple parts for fixed and flexible manufacturing. Design, setup and development of tooling for robots, computer numerical control machines and other production equipment. Transfer line tooling.
Prerequisites: take MFGE-320 and CADD-113; minimum grade C.

MFGE-490 Manufacturing System Design Problems (1-3 cr.)
Fall, Spring and Summer
Manufacturing system design through the application of previously learned principles and techniques. Issues to be addressed include: product design for manufacturability, process and tooling design and fabrication, system layout and equipment configuration, information and control architecture, implementation of quick-changeover strategies, task sequencing and scheduling, and simulation and evaluation of alternatives.

MFGT Manufacturing Technology

MFGT-110 Materials and Manufacturing Processes (3 cr.)
Fall and Spring
Manufacturing processes, material properties and their selection for product functions. Structure and characteristics of metal, polymer/wood, ceramic and composite materials will be examined.

MFGT-202 Welding and Casting Processes (3 cr.)
Fall and Spring
Lab intensive class utilizing various processes and parameters in the welding and foundry areas.
Prerequisites: take MFGT-110.

MFGT-203 Machining Metal Forming Processes (3 cr.)
Fall and Spring
Machine tool concepts providing an operational knowledge of traditional and non-traditional machining processes. Fundamental forming machine and hand tool operations. Sheet metal pattern development.
Prerequisites: take MFGT-110.

MFGT-204 Polymer Processes (3 cr.)
Fall and Spring
Introduction to properties of plastic, elastomeric and fiber-reinforced composite materials and the processes used to manufacture products from them. Primary and secondary manufacturing processes used to convert wood-fiber materials into components and/or finished products.
Prerequisites: take MFGT-110.

MFGT-303 Computer Aided Manufacturing (3 cr.)
Fall and Spring
Justification for and application of computer assistance in manufacturing process; machine process control, inventory and materials handling, robotics and automated assembly, product design and part grouping in relation to total manufacturing operation.
Prerequisites: take either MFGT-203 and CADD-112 or MFGT-203 and AEC-131.

MFGT-305 Industrial Robotics (3 cr.)
Fall and Spring
Specifications, planning, purchasing decisions, and programming of industrial robots. Math proficiency greater than or equal to Math-120.

MFGT-315 Metallurgy (3 cr.)
Fall and Spring
Properties of crystalline solids, production of iron and steel, the carbon-iron equilibrium diagram, principles of heat treatment, properties of ferrous alloys. Production, properties, and theory of the most important non-ferrous metals and alloys.

MFGT-330 Plastics For Teachers (2 cr.)
Summer
Overview of plastics as a manufacturing material. Focus on plastics processes: injection molding, blow molding, extrusion, thermoforming, and reinforced resin composites. Includes lab projects for the technology education classroom and tours to plastic processing industries.

MFGT-337 Numerical Control in Manufacturing (1-3 cr.)
Fall and Spring
Investigation and justification of numerical control of machine tools; types of control units and systems, feedback systems, manuscript writing and manual programming, tape punching and machine set up, fixture design and tool setting; working knowledge of basic machining processes recommended.
Prerequisites: take MFGT-303.

MFGT-340 Plastics Processing (3 cr.)
Fall, Spring and Summer

Injection molding process control, material properties, statistical process control, and basic product and mold design. Basic thermoforming processes and product design; profile, sheet, and film extrusion; blow molding processes; and resin composite materials and molding processes. Prerequisites: take MFGT-102.

MFGT-345 Design and Simulation of Manufacturing Cells (3 cr.)
Fall and Spring
Applied manufacturing system design and evaluation. Group technology approach. Computer assisted coding and classification. Development of part families. Efficient design of manufacturing cells. Evaluation of manufacturing system designs using simulation and other techniques. Basic statistics and computer programming abilities desirable.

MFGT-400 Workshop: (1-3 cr.)
Fall, Spring and Summer
Special topics manufacturing, providing hands-on or experiential learning activities. Specific content and title to reflect the topic of the workshop. **R**

MFGT-489 Business and Industry Internship (1-8 cr.)
Fall and Spring
Off-campus work and study in student's area of concentration; approved salaried position with cooperating company for a semester or summer session. Junior level or higher. **R**

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MFT Marriage and Family Therapy

MFT-453 Couples Therapy and Communication Training 2-3 cr.
Fall
Theory and intervention that focuses on couples therapy and communication training. Application of skills to personal relationships and professional work. Equivalent to HDFL-453, 212-653.

MFT-466 Alcoholism and Family Systems Intervention 2 cr.
Spring and Summer
The role of alcoholism in the family and how to intervene therapeutically. Equivalent to PSYC-466, 479-666, 413-666.

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MSCS Mathematics, Statistics and Computer Science

MSCS-280 Graph Theory With Applications in Computer Science 3 cr.
Fall and Spring
Basic logic and proving skills, Boolean Algebra, digital logic, recurrence relation, principles of graph theory, computer representation of graphs, properties of general graphs, structure and properties of special graphs, flow networks, computer applications of graph theory, algorighms and complexity analysis. Prerequisites: take CS-244.

MSCS-390 Topics 1-2 cr.
Topics of current importance in applications of mathematics to problems in business, industry, government or society. May be repeated for additional credit with consent of program director. Equivalent to 354-590. R

MSCS-446 Numerical Analysis I 3 cr.
Theory and applications of numerical methods for linear algebra, non-linear equations and polynomial interpolation. Equivalent to 354-446. P: MATH-158, MATH-275, and CS-145.

MSCS-447 Numerical Analysis II 3 cr.
Theory and applications of numerical methods for approximation, numerical integration and differentiation, differential equations, and Fourier analysis. Equivalent to 354-447. P: MSCS-446, MATH-255.

MSCS-475 Applied Mathematics Internship 2-8 cr.
Fall, Spring and Summer
Off-campus work and study in approved position to gain experience in using computer and/or statistical techniques in the analysis and solution of real-world problems. Interns receive salaried appointments with cooperating companies for summer or summer plus one semester. Junior level or higher. Equivalent to 354-475. **R**

MSCS-490 Mathematical Models I 2 cr.
Fall Semester
Supervised experiences in construction of mathematical models for the solution of problems in area of student's needs and interests; resource materials. Senior level or higher. Applied Mathematics and Computer Science majors only. Equivalent to 354-490.

MSCS-491 Mathematical Models II 2 cr.
Spring Semester
Continuation of MSCS-490. Equivalent to 354-491. P: MSCS-490.

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MSL Military Science and Leadership

MSL-101 Introduction to Military Leadership I (1 cr.)
Fall
Introduction to the Army profession and military leadership. Exploration of the seven Army values and 16 Army leadership dimensions, as well as some core competencies critical to effective leadership (i.e. management, problem-solving, decision-making). Off campus weekend leadership orientation in a military environment with outdoor physical activities, including pugil stick, obstacle course, land navigation/orienteering, basic rifle marksmanship, and confidence course training.

MSL-201 Innovative Tactical Leadership (2 cr.)
Fall
Identification of successful leadership characteristics through the observation of the actions of others and one's-self through practical exercises. The course is designed to facilitate development of a personal leadership style. Includes physical training and leadership lab requirements. Instructor's consent required.

MSL-301 Adaptive Team Leadership (3 cr.)
Fall
The study, practice and evaluation of adaptive leadership attitudes, skills and actions as presented in individual leader and small unit level tactical scenarios. Primary focus is on preparation for the national Leader Development and Assessment Course (LDAC), coming at the end of the junior year. Instructor's consent required.

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MUSIC Music

MUSIC-101 Class Piano I 1 cr.
HUM CRPRF Fall and Spring Semesters
Group instruction in piano technique and repertoire at beginner level. One one-hour lesson per week; additional practice time required. Equivalent to 360-101.

MUSIC-102 Class Voice I 1 cr.
HUM CRPRF Fall, Spring and Summer
Group instruction in vocal technique. Solo performance in class. Equivalent to 360-102. **R**

MUSIC-111 Advanced Piano I 1 cr.
Fall and Spring Semesters
Private instruction in piano technique and repertoire. One 1/2-hour lesson per week; additional practice time required; optional recital. Equivalent to 360-111.

MUSIC-112 Advanced Voice I 1 cr.
Fall and Spring Semesters
Private instruction in vocal technique and repertoire. One 1/2-hour lesson per week; additional practice time required; optional recital. Equivalent to 360-112.

MUSIC-130 Music Appreciation 2 cr.
HUM ARTMU Fall, Spring and Summer
Music materials as they pertain to perceptive listening; music and musicians from medieval times to present; students gain significant awareness of great music. Students do not earn credit for both MUSIC-130 and MUSIC-132. Equivalent to MUSIC-132, 360-132, 360-130.

MUSIC-132 Music in Our World 3 cr.
HUM ARTMU ESC Fall, Spring and Summer
Music materials as they pertain to perceptive listening; music and musicians from the beginnings of music to the present. Great music from many cultures. Students do not earn credit for both MUSIC-130 and MUSIC-132. Equivalent to MUSIC-130, 360-132, 360-130.

MUSIC-201 Class Piano II 1 cr.
GEHUM CRPRF Fall and Spring Semesters
Continuation of MUSIC-101 at intermediate level. One one-hour lesson per week; additional practice time required. Equivalent to 360-201.

MUSIC-206 Music for the Young Child 2 cr.
Fall and Spring Semesters
Music elements and experience, methods and materials for guiding the musical growth of children from birth through third grade. Equivalent to 360-204, 360-206. P: MUSIC-101.

MUSIC-211 Advanced Piano II 1 cr.
Fall and Spring Semesters Continuation of MUSIC-111. Equivalent to 360-211.

MUSIC-212 Advanced Voice II 1 cr.
Fall and Spring Semesters Continuation of MUSIC-112. Equivalent to 360-212.

MUSIC-264 Jazz Band 1 cr.
HUM CRPRF Fall and Spring Semesters
Jazz styles and improvisation from the dance band era to the present. Study and performance of contemporary "big band" jazz. Membership is open to all qualified students. Instructor's consent required. Membership by audition. Equivalent to 360-264. **R**

MUSIC-265 University Choir 1 cr.
HUM CRPRF Fall and Spring Semesters
Advanced choral techniques, reading and analysis of choral music of all types and periods. Concert and radio appearances. Equivalent to 360-265. **R**

MUSIC-266 Concert Band 1 cr.
HUM CRPRF Fall and Spring Semesters
Fundamentals of musical expression, tone production and quality, and special problems of technique. Membership by audition only. Equivalent to 360-266. **R**

MUSIC-267 Symphonic Singers 1 cr.
HUM CRPRF Fall and Spring Semesters
Advanced choral techniques, reading and analysis of choral music of all types and periods. Membership by audition only. Equivalent to 360-267. **R**

MUSIC-268 Solo and Ensemble 1 cr.
Fall and Spring Semesters
Coaching of advanced vocal and instrumental performers for public performance. Equivalent to 360-268. **R**

MUSIC-270 Vocal Jazz Ensemble 1 cr.
HUM CRPRF Fall and Spring Semesters
Performance of vocal jazz in a select choral ensemble. Membership by audition only. Equivalent to 360-270. **R**

MUSIC-311 Advanced Piano III 1 cr.
Fall and Spring Semesters
Continuation of MUSIC-211. Equivalent to 360-311. **R**

MUSIC-312 Advanced Voice III 1 cr.
Fall and Spring Semesters
Continuation of MUSIC-212. Equivalent to 360-312. **R**

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PE Physical Education and Athletics

PE-101 Aerobic Dance (1 cr.)
HPE ACTV Fall and Spring
Introduction to aerobic dance as a technique for the development of physical fitness.

PE-103 Archery/Beginning (1 cr.)
HPE ACTV Fall and Spring

PE-105 Bow Hunting (1 cr.)
HPE ACTV Fall
Conservation, safety, selection and care of equipment; techniques and practical bow hunting experience.

PE-107 Badminton (1 cr.)
HPE ACTV Fall and Spring

PE-109 Basketball (1 cr.)
HPE ACTV Fall **R**

PE-110 Bicycling (1 cr.)
HPE ACTV Fall, Spring and Summer
Bicycling for health and fitness: safety, technique, and knowledge.

PE-113 Bowling (1 cr.)
HPE ACTV Fall and Spring **$**

PE-115 Canoe Techniques (1 cr.)
HPE ACTV Fall and Spring **$**

PE-120 Self-Paced Personal Fitness (1 cr.)
HPE
Improvement of personal physical fitness through self-paced exercise programs and fitness activities.

PE-121 Exercise For Fitness (1 cr.)
HPE ACTV Fall, Spring and Summer

PE-122 Fitness Yoga (1 cr.)
HPE WinTerM
An introduction to yoga as a mind/body fitness practice.

PE-125 Fly Fishing (1 cr.)
Spring

Fly tying, casting techniques, literature, stream craft, equipment considerations, conservation ethics and natural resources stewardship.

PE-129 Golf(1 cr.)
HPE ACTV Fall, Spring and Summer
Fundamental principles of golf; skills, history, etiquette and application of techniques. Required: play 27 holes of golf, pay greens fees, furnish three golf balls for class use. **$**

PE-132 Horseback Riding-Beginning Western (1 cr.)
HPE ACTV
Western horsemanship: basic body position and control at the walk, trot and lope. **$**

PE-133 Horseback Riding-Beginning English(1 cr.)
HPE ACTV Fall and Spring **$**

PE-134 Horseback Riding-Intermediate English (1 cr.)
HPE ACTV
English riding skills: serpentines and figure eights at advanced gaits, simple lead changes, side pass and turns on the forehand and haunches. **$**

PE-135 Walking/Jogging (1 cr.)
HPE ACTV Fall and Spring
The study and practice of walking/jogging as an exercise philosophy, as an exercise technique and an exercise program.

PE-136 Ice Fishing (1 cr.)
HPE ACTV WinTerM
An introduction to the sport of ice fishing.

PE-142 Outdoor Skills(1 cr.)
HPE ACTV Fall and Spring **$**

PE-143 Rock Climbing (1 cr.)
HPE Summer
Rock climbing as a recreational sport.

PE-144 Personal Defense (1 cr.)
HPE ACTV Fall, Spring and Summer
Development of physical fitness for defense consciousness; techniques of initial and basic defense skills in weapon and rape attacks.

PE-145 Practicum in Intercollegiate Athletics (1 cr.)
HPE ACTV Fall and Spring
Practical experience in intercollegiate athletics, including completion of a season as a member of an intercollegiate team. Prerequisites: take PE-200. **R**

PE-146 Racquetball/Beginning (1 cr.)
HPE ACTV Fall and Spring

PE-148 Relaxation (1 cr.)
HPE ACTV Fall and Spring

PE-150 Snowboarding (1 cr.)
HPE
An introduction to the skills and safety aspects basic to snowboarding.

PE-152 Skiing (1 cr.)
HPE ACTV Spring **$**

PE-156 Soccer (1 cr.)
HPE ACTV Fall, Spring and Summer
The development and improvement of the skills and tactics required in the sport of soccer.

PE-159 Softball (1 cr.)
HPE ACTV Spring
The development and improvement of the skills required in the sport of softball.

PE-173 Skin and Scuba Diving (1 cr.)
HPE ACTV Fall, Spring and Summer **$**

PE-176 Tennis/Beginning (1 cr.)
HPE ACTV Fall, Spring and Summer

PE-182 Tumbling I (1 cr.)
HPE ACTV Spring
An introduction to basic tumbling skills, including forward, backward, and sideward rotational skills as well as springing and vaulting movements from the hands and feet.

PE-183 Tumbling II (1 cr.)
HPE ACTV
Continued study of tumbling techniques including forward and backward rotational skills, twisting, and connections of rotational skills.
Prerequisites: take PE-182 (12527).

PE-184 Tumbling III (1 cr.)
HPE ACTV
Continued study of tumbling techniques including multiple twisting and multiple flipping rotational skills.
Prerequisites: take PE-183.

PE-185 Volleyball (1 cr.)
HPE ACTV Fall and Spring **R**

PE-187 Weight Training (1 cr.)
HPE ACTV Fall, Spring and Summer

PE-200 Orientation To Intercollegiate Athletics (1 cr.)
Fall and Spring
Introduction to intercollegiate athletics, including NCAA and conference regulations; current issues, such as professional sports, costs, drugs, Title IX, minority issues and ethics; components of athletic programs; physiology of exercise; and psychology of sport.

PE-265 Physical Activities For Young Children (2 cr.)
Fall and Spring
Sequential development of physical perceptual skills in children, birth to age 5; perceptual motor activities that promote development.

PE-345 Basketball Officiating (1 cr.)
Fall
Rules and officiating techniques for men's and women's basketball; preparation for DGWS and/or WIAA officiating certifications.

PE-346 Football Officiating (1 cr.)
Fall
Application of football officiating rules and techniques.

PE-352 Theory and Management of Coaching (2 cr.)
Fall
Current management principles and practices applied to the profession of coaching.

PE-362 Psycho-Social Aspects of Athletics (2 cr.)
Spring
Examination of the psychology of sport and human movement. Understanding motivation, individual differences and social influence.

PE-401 Coaching Gymnastics (2 cr.)
Spring
Elements of gymnastic tumbling and use of gymnastic apparatus as part of a modern physical education program.

PE-460 Coaching Basketball (2 cr.)
Spring
Fundamentals and methods of teaching and coaching basketball, definite plan of offense and defense, selected techniques analyzed, rules and practice schedules, theories and their applications.

PE-461 Coaching Football (2 cr.)
Fall
Fundamentals and methods of teaching and coaching football, definite plan of offense and defense, selected techniques analyzed, rules and practice schedules, theories and their applications.

PE-470 Coaching Baseball (2 cr.)
Spring
Fundamentals and methods of teaching and coaching baseball, definite plan of offense and defense, selected techniques analyzed, rules and practice schedules, theories and their applications.

PE-471 Coaching Track and Field (2 cr.)
Spring
Fundamentals and methods of teaching and coaching track and field, definite plan of offense and defense, selected techniques analyzed, rules and practice schedules, theories and their applications.

PE-478 Coaching and Officiating Volleyball (2 cr.)
Fall
Skills and techniques of coaching and officiating competitive volleyball. Instructor's consent required. Prerequisites: take PE-185.

PE-480 Coaching Youth Athletes (2 cr.)
Fall, Spring and Summer
Coaching strategies for organized non-varsity youth sports programs--philosophy, psychology, physiology, pedagogy, prevention and care of injuries, and legalities.

PE-481 Coaching Hockey (2 cr.)
Fall and Spring
Philosophies, fundamentals and methods of teaching and coaching offensive and defensive hockey skills and strategies; organizing and administering hockey programs at all age levels. Sophomore level or higher.

PE-482 Coaching Softball (2 cr.)
Fall and Spring
Philosophies, fundamentals and methods of teaching and coaching offensive and defensive softball skills and strategies; organizing and administering softball programs at all age levels. Sophomore level or higher.

PE-483 Coaching Soccer (2 cr.)
Fall and Spring
Philosophies, fundamentals and methods of teaching and coaching offensive and defensive soccer skills and strategies; organizing and administering soccer programs at all age levels. Sophomore level or higher.

PE-490 Practicum in Coaching (1-3 cr.)
Fall and Spring
On- or off-campus work and study in athletic coaching with competitive teams.

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PHIL Philosophy

PHIL-201 Introduction to Philosophy 3 cr.
HUM PHIL GLP Fall and Spring Semesters

Introduction to the principal problem areas and history of philosophy, as well as to the nature of philosophical investigation.

PHIL-205 Philosophy of Religion 3 cr.
HUM PHIL Fall Semester
Principal philosophical problems in the various dimensions of religious experience and belief.

PHIL-215 Eastern Philosophy 3 cr.
HUM PHIL GLP Spring Semester
Philosophies of India, China and Japan: Hinduism, Buddhism, Confucianism, Taoism and Zen Buddhism.

PHIL-215 Multicultural Philosophy 3 cr.
HUM PHIL ESA
African American, Hispanic American, Asian American, American Indian, and Feminist philosophies. Philosophical issues of race, social justice, values, environmental ethics, spiritual belief, and epistemology.

PHIL-235 General Ethics 3 cr.
HUM PHIL Fall, Spring and Summer
Ethical valuing process: principal ethical theories and their application to common human problems. Prerequisites: take ENGL-102, ENGL-112 or ENGL-113.

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PHYS Physics

PHYS-150 The Nature and Application of Light and Color (2 cr.)
NSCI PHYSC Fall and Spring
The nature of light and color: the basic principles of our visual perception of nature and the arts are presented for students with no formal background in science. Math placement test required or Math-010.

PHYS-151 Astronomy (3 cr.)
NSCI PHYSC LAB Fall and Spring
The solar system, stars, galaxies and the universe. Physical processes and observational methods.

PHYS-211 Introduction to Physics (3 cr.)
NSCI PHYSC Fall
Introduction to principles of physics, including mechanics, fluids, heat and thermodynamics, light and sound, electricity and magnetism; their applications to specific technologies.

PHYS-212 Introduction to Physics: Lab (1 cr.)
NSCI PHYSC LAB Fall, Spring and Summer
Measurement, analysis and presentation of laboratory data on basic physics concepts, including mechanics, fluids, heat, electricity, light and sound. Corequisite courses: PHYS-211.

PHYS-222 Heat and Thermodynamics (2 cr.)
Fall, Spring and Summer
Concepts of temperature and heat, temperature- dependent properties and processes, heat transfer; laws relating heat and other forms of energy.
Prerequisites: take PHYS-231.

PHYS-231 General Physics I (4 cr.)
NSCI PHYSC LAB Fall, Spring and Summer
Algebra- and trigonometry-based general physics course: mechanics and sound with laboratory. Math proficiency greater than or equal to Math-121.

PHYS-232 General Physics II (4 cr.)
NSCI PHYSC LAB Fall, Spring and Summer
Algebra- and trigonometry-based general physics course: electricity and light with laboratory.
Prerequisites: take PHYS-231.

PHYS-241 College Physics I (5 cr.)
NSCI PHYSC LAB Fall, Spring and Summer
Calculus-based general physics course: mechanics and thermodynamics with laboratory.
Prerequisites: take MATH-153 or MATH-156.

PHYS-242 College Physics II (5 cr.)
NSCI PHYSC LAB Fall, Spring and Summer
Calculus-based general physics course: electricity, sound,
light and selected topics in modern physics with laboratory.
Prerequisites: take PHYS-241.

PHYS-250 The Physics of Light and Color (3 cr.)
NSCI PHYSC LAB Fall and Spring
Properties, sources and perception of light are examined through lectures and laboratory activity. Topics considered are: color systems and vision, optical devices and phenomena; and image formation and appearance.
Prerequisites: take MATH-118, MATH-120 or MATH-123.

PHYS-251 Topics in Astronomy (1 cr.)
NSCI PHYSC Fall
Qualitative analysis emphasizing physical principles of selected topics in astronomy. Significance of modern methods of obtaining astronomical information.

PHYS-255 Meteorology (2 cr.)
NSCI PHYSC Fall and Spring
Physical processes that determine properties of the earth's atmosphere: precipitation, atmospheric circulation, weather, climate and human influence on the atmosphere in the framework of physics.

PHYS-257 Introduction to Geology and Soil Mechanics (3 cr.)
Fall, Spring and Summer
Physical processes involved in rock formation, mountain building, erosional landscapes, plate tectonics, earthquakes and geologic dating. Elementary soil mechanics.

PHYS-258 Introduction to Geology (2 cr.)
NSCI PHYSC Fall and Spring
Composition of the earth and its physical processes, including geologic time, rocks and minerals, raw resources and energy, volcanism, earthquakes, streams and groundwater, weathering, glaciation, shorelines, deserts, wind, and planetary geology.

PHYS-281 University Physics I (5 cr.)
NSCI PHYSC LAB Spring
Calculus-based general physics course: mechanics and thermodynamics with laboratory.
Prerequisites: take MATH-154 or MATH-157.

PHYS-282 University Physics II (5 cr.)
NSCI PHYSC LAB Fall
Calculus-based general physics course: electricity, sound, light, and selected topics in modern physics with laboratory.
Prerequisites: take PHYS-281.

PHYS-321 Statics and Strength of Materials (4 cr.)
Fall, Spring and Summer
Force and moment equilibrium including friction, trusses, frames and machines. Simple and compound stress and strain including beams and joints. No credit for students taking PHYS-325 or PHYS-331.
Prerequisites: take PHYS-241 or PHYS-281.

PHYS-325 Strength of Materials (3 cr.)
Fall, Spring and Summer
Fundamental theory of strength of materials. Analysis of tension, compression, shear, biaxial tension and compression, torsion, stresses and deflection of beams.
Prerequisites: take PHYS-231, MATH-153 or MATH-156; or take PHYS-241; or take PHYS-281.

PHYS-327 Solid State Physics (3 cr.)
Spring
Crystalline structure, lattice vibration and energy states, Brillouin zones, electrons in metals, semi-conductors, and dielectric and magnetic properties of solids.
Prerequisites: take PHYS-282 or PHYS-242; and MATH-157 or MATH-154.

PHYS-329 Atomic and Nuclear Physics (3 cr.)
Fall
Elements of atomic and nuclear physics.
Prerequisites: take PHYS-282; or take PHYS-242 and MATH-154 or MATH-157.

PHYS-330 Science and the Fallible Mind for Educators (2 cr.)
Summer
Cross-disciplinary, physical science course primarily intended for educators. Defines and examines science with a perspective on societal issues related to the human mind, consumer marketing, psychology, religion, risk and fear, global concerns, and the use and abuse of numbers. High school algebra.

PHYS-331 Statics (3 cr.)
Fall
Essential elements of statics: simple force system, theory and application of non-concurrent forces, couples, friction, non-coplanar forces, trusses and other structures.
Prerequisites: take PHYS-241 or PHYS-281.

PHYS-333 Dynamics (3 cr.)
Spring
Essential elements of dynamics: rectilinear, angular and harmonic motions; forces producing motion, work, energy, acceleration, impulse and momentum.
Prerequisites: take PHYS-331.

PHYS-335 Optics (3 cr.)
Spring
Optics with emphasis on the wave nature of light: interference diffraction, polarization and coherence; their applications in holography.
Prerequisites: take PHYS-282; or take PHYS-242 and MATH-154 or MATH-157.

PHYS-351 Astrophysics (3 cr.)
Fall, Spring and Summer
Quantitative and qualitative study of the solar system, stars, galaxies and the universe. Physical processes and observational methods and analysis.
Prerequisites: take PHYS-282 or PHYS-242.

PHYS-380 Electromagnetic Fields (3 cr.)
Fall
Development and application of the theory of electromagnetic fields; analysis of the electromagnetic properties of materials and Maxwell's equations.
Prerequisites: take PHYS-282 or PHYS-242 and MATH-255.
Corequisite course: MATH-255.

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PKG Packaging

PKG-100 Packaging and Society (2 cr.)
TECH GLP Fall and Spring
A broad overview of the importance of packaging in society. Introduction to packaging and its interrelationship to multiple disciplines including impact on people and the environment.

PKG-150 Packaging Fundamentals (2 cr.)
Fall and Spring
Relationship to marketing and consumer behavior, control through legal and industrial regulations, function within larger organization, roles of professional engineer, packages and their function.

PKG-200 Packaging Materials (3 cr.)
Fall and Spring
Origin, composition, properties and application of packaging materials; lab work in packaging and materials testing methods.
Prerequisite: take PKG-150.

PKG-250 Consumer Packaging Systems (3 cr.)
Fall and Spring
The study of packaging from the design concept through production. Lab work on structural design, sample making, and machine operation. Discussions on standard packages and their applications.
Prerequisite: take PKG-200.

PKG-260 Distribution Packaging (3 cr.)
Fall and Spring
Packaging systems to support the distribution functions. Topics will include shipping containers, palletizing, unitizing, barrier problems, marking and coding for shipment, freight regulations, military specifications and hazardous materials regulations.
Prerequisite: take PKG-200.

PKG-335 Packaging Machinery (3 cr.)
Spring
Weighing, forming, filling, sealing, cartoning, capping, labeling, wrapping, casing, uncasing, palletizing/depalletizing machines as applies to the functional capabilities of speed, materials, containers, and operating functions.
Prerequisite: take PKG-200.

PKG-350 Packaging Design and Evaluation (3 cr.)
Fall and Spring
Chemical and physical protection problems; materials, structure, graphics and regulations in package design; shock and vibration forces in package evaluation; practical applications of evaluation using electronic instrumentation.
Prerequisite: take PKG-250 and PKG-260.

PKG-489 Business and Industry Internship (1-8 cr.)
Fall and Spring
Off-campus work and study in student's area of concentration; approved salaried position with cooperating company for a semester or summer session. Junior level or higher. **R**

PKG-490 Packaging Development (3 cr.)
Fall and Spring
Applications of packaging functions: developing a product's complete packaging system, from final production of product to consumer.
Prerequisites: take PKG-350.

PKG-495 Packaging Seminar (2 cr.)
Fall and Spring
Current packaging problems or developments (subject based on students' interests and current issues).

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POLS Political Science

POLS-210 American Government 3 cr.
SBSCI POLS ESB Fall, Spring and Summer
Structures and processes of national, state and local government in the United States; constitutional framework, political theory and ideology, racial and ethnic dimensions of U.S. political culture, civil rights, media, voting, parties, elections, interest groups, and policy making. Comparisons with selected foreign governments. Equivalent to 375-210, 375-210.

POLS-220 State and Local Government 3 cr.
State and local governments within U.S. federal system. Equivalent to 375-220.

POLS-250 Politics and Technology 3 cr**.**
TECH Fall and Spring Semesters
Analysis of the interfacing of technology and politics, focusing on the dynamics of the public policy process involving selected technologies, events, issue groups and governmental institutions. Equivalent to 375-250.

POLS-260 Problems of U.S. Foreign Policy 3 cr.
Analysis of U.S. foreign policy objectives and decision making; problems of national defense, Third World relationships, economic and resource policies, Presidential/Congressional authority, intelligence operations and public opinion. Equivalent to 375-260.

POLS-270 Introduction to Comparative Government 3 cr.
Analysis and comparison of basic political principles, institutions and problems of major Western, Communist and underdeveloped nations; consideration of alternative approaches to political order and change. Equivalent to 375-270.

POLS-310 Political Parties and Elections 3 cr.
Analysis of modern political parties. Nominating methods, campaigns, elections. Practical politics in legislative bodies; machines and bosses. Equivalent to 375-310. P: POLS-210.

POLS-315 Public Policy Analysis 3 cr.
Fall and Spring Semesters
Analysis of origins of public policy and policy-making process. Specific case studies of public policy. Equivalent to 375-510. P: POLS-210.

POLS-340 International Relations 3 cr.
SBSCI POLS Fall and Spring Semesters
The global political system; influence of technology, ideology, ethnicity, national interests, power, morality, multinational business, international organizations, and economic, demographic and ecological patterns; approaches to managing war, violence, economic relations, global pollution and other international problems. Equivalent to 375-340.

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POWER Power

POWER-103 Power Mechanics 2 cr.
Fall, Spring and Summer
Internal and external combustion heat engines, mechanical and fluid transmission systems; present and future applications and limitations. Laboratory work emphasized. Equivalent to 110-103, 185-103.

POWER-260 Introduction to Fluid Power 2 cr.
Fall, Spring and Summer
Basic fluid mechanics, pneumatics, hydraulics, control systems and common industrial circuits. Equivalent to 185-260, 110-260.

POWER-303 Mechanical Power Transmission 3 cr.
Fall and Spring Semesters
Fundamentals of mechanical power transmission: theory of operation, selection of components, suggestions for application, and analysis of systems.
Equivalent to 185-303, 110-303.

POWER-361 Industrial Hydraulics 2 cr.
Fall Semester
Theory, operation and construction of hydraulic systems and circuits; pumps, reservoirs, lines, control valves and actuators. Equivalent to 185-361, 110-361.

POWER-362 Industrial Pneumatics 2 cr.
Spring Semester
Theory, operation and construction of pneumatic and pneumatic/hydraulic system components, with application to basic industrial circuits; compressors, plumbing, control valves and actuators. Equivalent to 185-362, 110-362.

POWER-395 Seminar 1-2 cr.
Fall, Spring and Summer
Specific content is designed to upgrade competencies of participants. Content will change to reflect current state of the art in electricity/electronics or power mechanics. Equivalent to 185-595. R

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PSYC Psychology

PSYC-100 Psychology Seminar I — Foundations (1 cr.)
Fall, Spring and Summer
An orientation activity for all students in their initial semester as a psychology program student. Information concerning psychology as a discipline, applied profession, and liberal arts program is presented. Career and graduate training opportunities are reviewed.

PSYC-110 General Psychology (3 cr.)
SBSCI PSYC Fall, Spring and Summer
An introduction to psychology as a discipline and applied science. Emphasis is placed on scientific methodology as it is applied to behavior, learning, memory, perception, motivation, development, individual differences, mental health, the physiological basis for behavior, and on the application of
psychological principles to human experience.

PSYC-120 Psychology of Adjustment (3 cr.)
Fall and Spring
Principles, models and theories of psychology applied to understanding self, others, relationships and problems of contemporary life. Emphasis on healthy and effective personal and interpersonal life coping skills. Strategies and resources for confronting common life adjustment concerns.

PSYC-190 Psychological Research Methods (4 cr.)
Fall and Spring
An introduction to research methods used in the behavioral sciences. Lecture and laboratory activities involve applications of methodologies and computer technologies to understand and produce research compatible with American Psychological Association standards.

PSYC-210 Introduction To Applied Psychology (3 cr.)
ESB Fall, Spring and Summer
Introduction to the application of psychological theories, methods of investigation, and research findings to a diverse spectrum of social problems. Emphasis is placed on the use of scientific psychology to improve aspects of everyday life.
Prerequisites: take PSYC-110.

PSYC-251 Child Psychology (3 cr.)
Fall, Spring and Summer
A study of the total psychological development of children emphasizing age groups spanning the pre-school and pre-pubescent child and methods for scientific measurement and understanding of child behavior.
Prerequisites: take PSYC-110.

PSYC-270 Social Cognition and Behavior (3 cr.)
Fall, Spring and Summer
Social factors affecting the behavior, thought processes, and attitudes of individuals. Includes attitude assessment and change, prejudice, interpersonal attraction, social influence, aggression, cognitive biases, and attributions.
Prerequisites: take PSYC-110.

PSYC-281 Environmental Psychology (3 cr.)
Fall and Spring
Psychological aspects of person/environment interaction. People impacts on environment, and environmental impacts on people. Aspects of recreational environment, population density and stress factors.
Prerequisites: take BIO-101 or BIO-150.

PSYC-320 Psychology: Its History and Systems (3 cr.)
Fall, Spring and Summer
History of psychology and influence of early competing schools of thought: structuralism, functionalism, behaviorism, Gestalt psychology, and psychodynamic psychology. Evolution to present as a diverse behavioral science with emphasis on neobehaviorism, humanistic psychology, and cognitive psychology.
Prerequisites: take PSYC-110; take 9 credits of PSYC.

PSYC-330 Psychology of Learning (3 cr.)
Fall and Spring
A course designed to acquaint the student with the principles of learning drawn from experimental and theoretical psychology. These principles are demonstrated as they apply to animal and human learning. Modern viewpoints toward theories of learning are emphasized.

PSYC-335 Motivation and Emotion (3 cr.)
Fall and Spring
An experimentally oriented introduction to the fundamental principles of motivation and emotion. Prerequisites: take PSYC-110; take 9 credits of PSYC.

PSYC-340 Psychology of Individual and Group Differences (3 cr.)
ESC Fall and Spring
Nature and extent of differences if individuals and groups are studied. Intelligence, achievement, aptitudes, interests, attitudes, and general personality are the major differences included. Race, sex, nationality, social class and age in relation to individual differences are studied. Prerequisites: take PSYC-110; take 2 courses from PSYC.

PSYC-351 Children's Social Reasoning (3 cr.)
ESC Fall and Spring
Focused, in-depth study of social reasoning from birth through late childhood. Empathy, friendship, altruism, multicultural perceptions, shyness, assertiveness, aggression, loneliness, morality, values, and global responsibility. Heredity/environment-based theories. Assessment tools and prevention and intervention programs.
Prerequisites: take PSYC-251, HDFS-124, HDFS-264, or PSYC-270.

PSYC-352 Adolescent Psychology (3 cr.)
Fall, Spring and Summer
The physical, emotional, social, moral, and intellectual development of secondary school youth.
Prerequisites: take PSYC-110.

PSYC-361 Abnormal Psychology (3 cr.)
Fall, Spring and Summer
A study of more serious mental disturbances. Emphasis on the growing importance of mental disorders and on their early detection and referral is studied.

PSYC-370 Interpersonal Effectiveness Training (2 cr.)
Fall, Spring and Summer
Training in effective interpersonal communication attitudes and skills for creating healthy relationships including self-awareness/self- expression, understanding others' communication, assertive rights/responsibilities, dealing with difficult emotions, conflict management/resolution and mediation, collaborative problem solving and teamwork, and gender differences in communication style.

PSYC-371 Introduction To Health Psychology (3 cr.)
Fall and Spring
Principles of psychology applied to the promotion of health and wellness; prevention of disease, injury and premature death; psychological treatment of illness; improvement of health care; and formation of health policies. Instructor's consent required. Prerequisites: take 10 credits of PSYC.

PSYC-372 Psychology of Sex and Gender (3 cr.)
ESC Fall and Spring
Differences and similarities between females and males; psychosocial implications on personal and political status and the resulting influence on identity and self-concept.

PSYC-375 The Psychology of Marriage and the Family (2 cr.)
Fall and Spring
A study of the interpersonal relations involved in dating, mating and family collaboration with growing awareness of patterns for self- integration.

PSYC-377 Consumer Psychology (3 cr.)
Fall and Spring
Psychological principles and theories from the areas of motivation, perception, learning, attitude, information processing, personality, groups, organizational psychology, and environmental psychology are applied to the understanding of consumer behavior, consumer problems, and their solution.
Prerequisites: take PSYC-110.

PSYC-379 Public Relations (2 cr.)
Fall, Spring and Summer
Introduction to public relations in industry and education including community relations, employee relations, customer relations, media relations, tools of public relations, two-way communications, and special publics.

PSYC-381 Industrial Psychology (2 cr.)
Fall and Spring
A survey of the application of psychological principles of man's vocational pursuit. Emphasis is on individual differences and group behaviors which are involved in personnel selection, human factors engineering, industrial safety, motivation, personnel training, and consumer behavior. Course material is based primarily upon the latest behavioral science research in the field of industrial psychology.
Prerequisites: take PSYC-110.

PSYC-382 Human Resource Management (3 cr.)
Fall, Spring and Summer
Organization and coordination of personnel practices and methods. Consideration given to communication, employment, orientation and training, working conditions, supervision, performance evaluation, collective bargaining, salary administration, health and recreation.

PSYC-390 Experimental Psychology (4 cr.)
Fall, Spring and Summer
Experimental research methods used in basic and applied areas of psychology. Methodological issues introduced in context of actual research problems for integrated treatment of content and methodology. Students will apply this knowledge by participating in laboratory activities and designing and conducting their own experiments.
Prerequisites: take STAT-130, PSYC-190.

PSYC-391 Applied Psychophysiological Methods (3 cr.)
Theory, methods, laboratory procedures, and applications of physiological responses to psychological stimuli.
Prerequisites: take BIO-132.

PSYC-401 Workshop: Special Topics in Psychology (1-3 cr.)
Current specialized topics studied in a small group setting utilizing experimental activities. Instructor's consent required. **R**

PSYC-403 Management of Employee Reward Systems (3 cr.)
Fall
Review of issues in the reward and compensation of employees and of systematic methods for the determination of employee wages, incentives and benefits. Psychological theories of motivation, external equity, job analysis, identifying compensable factors used in job evaluation, comparable worth and performance appraisal, individual salary determination.
Prerequisites: take PSYC-382.

PSYC-432 Perception (3 cr.)
Fall
This course serves as an introduction to human perception. The content of the course is structured around an information processing model, with the sensory and memory facilities considered as information systems. The student will analyze perceptual research, become familiar with classical and modern psychophysical techniques and conduct experimentation in human information processing.

PSYC-442 Cognitive Processes (3 cr.)
Fall and Spring
Cognitive theories of attention, memory, language, reasoning and problem solving with applications to fields of education, vocational rehabilitation, gerontology, forensic, clinical and counseling psychology.
Prerequisites: take PSYC-110.

PSYC-451 Children's Learning (3 cr.)
Fall and Spring
Psychological study of basic learning processes in infants and young children. How and why learning occurs and how the course of learning can be modified; discussed from theoretical, research, and practical orientations including simple behavioral responses, concepts and language. Prerequisites: take PSYC-110.

PSYC-455 Myers-Briggs Type Indicator (3 cr.)
Principles of Carl Jung's theory of psychological type are explored with the Myers-Briggs Type Indicator (MBTI). Applications in personal, interpersonal and organizational development; teaching/training and learning styles; collaborative problem solving; conflict; stress and time management.
Prerequisites: take 15 credits of PSYC.

PSYC-460 Personality and Mental Health (3 cr.)
Fall and Spring
An introduction to the areas of psychology which are concerned with the recognition of the positive principles of mental health and their application to human behavior. In addition, an examination is made of a variety of theories which are representative of the major views of leading thinkers on the subject of personality and personality development. Prerequisites: take PSYC-110.

PSYC-473 Psychology of Stress (2 cr.)
Fall, Spring and Summer
Nature of stress and stress-related diseases, stress in daily life, techniques for managing stress, and plans for reducing stress in personal and professional life.

PSYC-475 Right Brain (2 cr.)
Spring and Summer
The two hemispheres of the human brain. Exploration and experience in right hemisphere modes of consciousness, through techniques such as meditation, hypnosis, drawing, guided imagery and dreaming.

PSYC-479 Advanced Public Relations (2 cr.)
Fall and Spring
Practice in planning and directing specific public relations programs, using the case problem approach. Prerequisites: take PSYC-379.

PSYC-480 Individual Research Project I (1 cr.)
Fall, Spring and Summer
Preliminaries of active research through the development of a research proposal which includes the problem statement, review of the literature and the design of the research project. Prerequisites: take PSYC-210, PSYC-390. **R**

PSYC-481 Individual Research Project II (1 cr.)
Fall, Spring and Summer
Research in a personal area of interest within the behavioral sciences. Requirements include the completion of a research report which meets APA guidelines. Prerequisites: take PSYC-480. **R**

PSYC-484 Introduction To Behavior Modification (2 cr.)
Fall and Spring
An introduction to the applied analysis of behavior. Emphasis is placed on the fundamentals of behavior modification, models of behavior control, and applications in a variety of settings. Prerequisites: take 3 PSYC courses.

PSYC-485 Recruitment and Selection of Human Resources (3 cr.)
Fall and Spring
In-depth examination of the processes involved in the design and implementation of procedures for selecting employees; the impact these procedures have on the organization; and recruitment, job analysis, testing methods, legal issues, selection strategies, career development. Prerequisites: take PSYC-382.

PSYC-490 Psychological Measurement (3 cr.)
Fall and Spring
An introduction to the assumptions, models and applications of measurement techniques in behavioral science. Test analysis, item analysis, reliability, and validity are extensively covered. The course also introduces the student to prediction and measurement of attitudes and opinions.

PSYC-493 Field Practicum in Public Relations Specialization (1-3 cr.)
Fall, Spring and Summer
Opportunity to apply public relations principles in a practical setting. All coursework for the public relations specialization must be completed prior to the practicum that serves as a capstone for the specialization. Both setting and job description must be approved by the faculty supervisor. **R**

RC Risk Control

RC-271 Safety Principles and Practices 3 cr.
Principles of accident prevention; school safety programs; identification of resources and content: motor vehicle, home, public, farm, industrial, school, recreational and civil defense. Equivalent to 140-271.

RC-301 Seminar 1 cr.
Fall and Spring Semesters
(Title will reflect specific business or management content.) Current topics in business and industrial management to meet specific needs of students enrolled. Equivalent to 140-501. R

RC-371 Alcohol, Drugs and Accident Prevention 3 cr.
Impact of alcohol and drug use on accident prevention programs; current efforts to rehabilitate alcohol and drug abusers. Equivalent to 140-574.

RC-372 Behavior Approach to Accident Prevention 3 cr.
Behavioral aspects of accident prevention from physiological, psychological, sociological and cultural perspectives; identifying, understanding and modifying attitudes and behavior. Equivalent to 140-575.

RC-374 Driver Education Laboratory Methods and Techniques 3 cr.
Role, aims and objectives of laboratory programs in driver and traffic safety education; multiple- student teaching techniques, simulation on-street behind-the-wheel and multiple-car driving range experiences provided. Equivalent to 140-377, 140-374.

RC-375 Driver and Traffic Safety 3 cr.
Classroom phase of driver education: curriculum selection and use, instructional resources and materials, and driver education administration. Equivalent to 140-375.

RC-381 Occupational Safety/Loss Control 2-3 cr.
Fall, Spring and Summer Overview of occupational accident prevention programs: techniques of measurement, cost of accidents, locating and identifying accident sources, and problems of selecting corrective action. Junior level or higher. Equivalent to 140-581.

RC-383 Voluntary OSHA Compliance 2-3 cr.
Fall Semester and Summer Session Implications of Federal Occupational Safety and Health Act of 1970 on industrial operations, systematic self-inspection and compliance procedures. Equivalent to 140-583.

RC-386 Fire Protection 3 cr.
Spring Semester
Behavior of fire: chemistry, protection, prevention and control. Equivalent to 140-586.

RC-387 Human Factors Engineering/Ergonomics 3 cr.
Fall Semester
Physiological and psychological abilities in human/machine interface, working performance, reliability, comfort and safety; effective design of people and work environment as a cybernetic system. Equivalent to 140-587.

RC-388 Construction Safety 2 cr.
Fall and Spring Semesters
Analysis of hazards, control procedures and systems related to typical construction equipment, tools and materials safety problems. Equivalent to 140-588.

RC-389 Fleet Risk Control Management 3 cr.
Spring Semester
Logistically-oriented management systems required to control risk in fleet operations including internal standards development/analysis, emergency response, accident analysis, loss benchmarking, driver selection and training, vehicle operation, substance abuse testing, hours of service, vehicle maintenance/inspection, route planning, cargo/personnel security, hazardous materials transportation, and regulatory controls. Equivalent to 140-589. P: RC-381 or RC-388.

RC-390 Product/Service Liability 2 cr.
Spring Semester
An analysis of product liability losses, laws and controls. Equivalent to 140-590.

RC-392 Construction Risk Management 3 cr.
Analysis and application of fundamental process steps for construction job site risk management. Equivalent to 140-392. P: RC-388.

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RD Design, Research and Development

RD-100 Introduction to Industrial Technology 1 cr.
Fall and Spring Semesters
Definition, history, and future of the industrial technology field and the present and emerging concentration areas. Business and industry links to options within industrial technology and the necessary preparation to meet graduates' future professional demands. Equivalent to 150-100, 150-196.

RD-205 Design for Industry 3 cr.
Fall and Spring Semesters
Industrial research and development experiences focusing on problems related to product development, innovation and problem solving, manual, semi-automatic and automatic production processes. Development and application of various systems for selection of materials and processing will be studied. Equivalent to 170-205, 183-205.

RD-320 Prototype Development and Model Making 3 cr.
Spring Semester
Introduction to model making and prototype development/construction. Competencies are developed in converting design, research and development and other creative ideas into three-dimensional objects using traditional and non-traditional machining and forming techniques. Three-dimensional design problems form the core of this course. Equivalent to 170-520, 130-532, 148-301, 183-520. P: MFGT-102.

RD-420 Research and Development 2 cr.
Fall and Spring Semesters
Research and development procedures applied to specific industrial material and processing problems. Equivalent to 170-620, 183-620.

RD-421 Research and Development Laboratory 1 cr.
Fall and Spring Semesters
This lab is taken in conjunction with RD-420 to allow students in technical majors to fulfill the requirements of the major research and design project. Equivalent to 170-621, 183-621. Corequisite: RD-420.

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REHAB Vocational Rehabilitation

REHAB-101 Introduction to Rehabilitation (3 cr.)
Fall and Spring
An introduction to serving people with disabilities. Philosophy, history, legislation, concepts and processes, and careers in rehabilitation services.

REHAB-102 Community Resources (3 cr.)
Fall and Spring
Role of community resources in rehabilitation.

REHAB-205 Rehabilitation Practicum (3-4 cr.)
Fall and Spring
Community based learning in application of rehabilitation concepts and principles. Includes weekly seminar for critique and skill development.
Prerequisites: take REHAB-101 minimum grade C; take REHAB-102 minimum grade C.

REHAB-230 Psychosocial Aspects of Disability (3 cr.)
ESC Fall and Spring

Subjective, objective, ethnic/cultural, and environmental factors related to the disability experience.
Prerequisites: take REHAB-101.

REHAB-300 Special Topics in Rehabilitation(1-2 cr.)
Special topics not available through regular courses. **R**

REHAB-300G Grantsmanship in the Helping Professions (1-2 cr.)
Summer
Explore grant writing in human service occupations and the necessity for such proposals as an element of change in society. Methods used to seek funding sources and evaluate requests for proposals.

REHAB-300N Community-Based Rehabilitation Services (1 cr.)
An examination of national priorities for community-based services designed to enhance competitive employment options for severely disabled persons.

REHAB-305 Sign Language I (3 cr.)
COMSK LANG Fall
Basic course in manual communication with persons who are deaf. Intensive practice in expressive and receptive communication.

REHAB-306 Sign Language II (3 cr.)
COMSK LANG Spring
Intermediate course in manual communication with persons who are deaf. American sign language, increasing sign vocabulary and communication speed.
Prerequisites: take REHAB-305.

REHAB-309 Introduction to Biofeedback (3 cr.)
Spring
Theory and applications of biofeedback in psychology, rehabilitation, medicine and education; in-depth review of the field; appropriate uses of biofeedback as a referral possibility; preparation for supervised clinical biofeedback experience.

REHAB-310 Vocational Evaluation (3 cr.)
Fall and Spring
Development of an individualized approach to conducting vocational evaluations with individuals with disabilities. Skill development in planning, selecting, and using assessment to OLS/techniques, and communicating findings.
Prerequisites: take REHAB-101 and REHAB-102.

REHAB-320 Rehabilitation and Chemical Dependency (3 cr.)
Spring
Chemical use and abuse with emphasis on the rehabilitation of persons who are chemically dependent and the historical and sociological implications of drug usage.

REHAB-321 Rehabilitation of Public Offenders (3 cr.)
Fall
Emphasis on programs designed to rehabilitate persons who are public offenders and sociological issues connected with the judicial system.

REHAB-325 Rehabilitation and Sensory Disability (3 cr.)
Introduction to persons with hearing and visual impairments or both. Methods and techniques used in sensory disability rehabilitation are discussed.

REHAB-327 Psychiatric Rehabilitation (3 cr.)
Fall
Goals and processes of psychiatric rehabilitation.Knowledge and application of skills for integrating diagnosis into planning and intervention with a focus on rehabilitation services for individuals with long-term mental illness in community-based settings.
Prerequisites: take PSYC-361 and REHAB-230.

REHAB-333 Adolescent Substance Use and Abuse (2 cr.)
Summer
Major concepts, current trends, and culturally sensitive approaches in the assessment, prevention and treatment of adolescent alcohol and drug addiction.

REHAB-350 Independent Living (2 cr.)
Fall
An overview of independent living programs in this country including evolution, goals, methods of service delivery, and management of the independent living program.

REHAB-355 Rehabilitation of the Older Disabled Worker (2 cr.)
Develop awareness and understanding of older disabled workers with a focus on implementing rehabilitation planning that enables continued participation in the work force or reinsertion into it following disability.

REHAB-360 Assistive Technology (2 cr.)
Fall and Spring
Provision of technology to enhance the lives of persons with disabilities. Delivery system, legislation, and issues related to funding are examined. Specific applications in communication, computers, mobility, and workstations and other technologies are reviewed.

REHAB-361 Microcomputer Applications in Rehabilitation (2 cr.)
Applications of microcomputer technology and adaptive devices in vocational evaluation, work adjustment, placement and administration.

REHAB-365 Laboratory in Rehabilitation Technology (2 cr.)
Spring
Experience utilizing technological aids/devices developed for persons with disabilities. Modify/adapt equipment to meet specific functional requirements. Construct switch/control mechanisms for equipment. Develop prototype solutions to vocational and independent living problems.
Prerequisites: take REHAB-360.

REHAB-401 Principles and Techniques of Caseload Management (2 cr.)
Fall and Spring
Principles and techniques of implementing case load management in service of clients of state vocational rehabilitation counseling agencies or rehabilitation facilities.
Prerequisites: take REHAB-230.

REHAB-402 Management of Non-Profit Organizations (3 cr.)
Spring
Principles and practices in the operation of non-profit organizations. Comparison of how non-profit and for-profit operations are affected by organizational structures and authority, budgeting practices, sources of income, personnel issues, strategic planning and program evaluation, and marketing. Application to community agencies.

REHAB-410 Job Placement Processes (3 cr.)
Fall and Spring
Placement theory and methods used to assist people with disabilities to obtain appropriate employment.
Prerequisites: take REHAB-230.

REHAB-420 Psychological Testing People With Exceptional Needs (2-3 cr.)
Fall, Spring and Summer
Use of common psychometric tests with specific emphasis on selection, evaluation, administration, scoring, and interpretation of standardized tests for individuals who are disabled, including those from various ethnic and cultural groups.

REHAB-452 Group Processes in Rehabilitation Settings (2 cr.)
Fall
Theory and application of group processes in rehabilitation settings; direct experience as member and facilitator of a group.

REHAB-459 Workforce Development, Disability, and Socioeconomics (3 cr.)
Macro/micro influences that keep people unemployed and underemployed, including community, services, providers, employers, and families. Interface among legislative initiatives, disability, and life/work. Policy, strategies, and skills that promote effective intervention and change. Intended for professionals in the field.

REHAB-460 Rehabilitation in the Private Sector (3 cr.)
Spring
Case coordination to support maximum medical recovery and/or vocational rehabilitation of an injured person involved in insurance funded cases. Differences between public and private rehabilitation processes. Interviewing, planning, assessing transferable skills, placing in suitable work, and communicating with other involved individuals. Business practices,

professional roles, and ethical issues.
Prerequisites: take REHAB-310.

REHAB-461 Forensics For the Human Service Professional (2 cr.)
Spring
Terminology and practices associated with forensic for human service professionals. Strategies and materials related to preparation for testimony and expert witness testimony in a court of law and other legal settings.

REHAB-462 Disability Management in Business and Industry (3 cr.)
Fall
Orientation to workers with disabilities in business and industry. Focus on reducing disability related costs, and the elimination of attitudinal and environmental barriers as they pertain to hiring, productivity, and retention of workers with disabilities. Governmental require- ments, linkage between business, community resources, and rehabilitation.

REHAB-470 Work Adjustment Services (2-3 cr.)
Fall and Summer
Principles and procedures of adjustment services. Emphasis upon the change and improvement of behavior. Supervised practical experience in interviewing, behavior observation, individual work adjustment planning, lesson plan development and report writing.
Prerequisites: take REHAB-310.

REHAB-480 Advanced Rehabilitation Practicum (2-6 cr.)
Spring
Advanced experience in service delivery to persons with disabilities in varied agency/service settings related to student's designated rehabilitation concentration. Instructor's consent required. **R**

REHAB-481 Application of Theories in Rehabilitation Counseling (3 cr.)
ESC Fall, Spring and Summer
Major theories and techniques used in rehabilitation counseling. Development of skills in the use of basic counseling techniques with individuals who are disabled and including those from various ethnic and cultural groups. Instructor's consent required.

REHAB-482 Sexuality and Disability (2 cr.)
Investigate sexuality as an integral part of the disability experience. Explore programs, techniques and personal biases in relation to sexuality of persons with disabilities.

REHAB-483 Vocational Counseling Issues (2 cr.)
Summer
Theoretical and applied approaches to vocational counseling and current research in vocational choice and career development as related to vocational counseling.

REHAB-488 Developing Collaborative Partnerships (3 cr.)
Fall
Development of professional relationships that are characterized by collaboration and respect for the consumer or student. Role of team members including human service professionals, consumer student, family members, school personnel, and community organization staff in collaborative decision making. Enhanced service delivery responsiveness through application of collaborative principles.

SCOUN School Counseling

SCOUN-301 Introduction to Guidance (2 cr.)
Fall, Spring and Summer
Policies and practices of organized guidance programs in educational settings; historical, philosophical and cultural bases for guidance services; guidance techniques for teachers; cooperative efforts of teachers, parents and counselors.

SCOUN-400 Workshop: Counseling/Psychological Services (1-2 cr.)
Summer **R**

SCOUN-447 Behavior Problems of Children (2 cr.)
Spring and Summer
Psychological, social and environmental factors contributing to developing child's behavior; cause and treatment of behavioral disorders in children 3 through 12; methods of observing, diagnosing, documenting and interpreting; underlying behavioral dynamics of problem children.

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SOC Sociology

SOC-110 Introductory Sociology (3 cr.)
SBSCI/SOC, ESC, GLP
Fall, Spring and Summer
Social interaction in human groups; relationships between individual and group; social inequality; basic social institutions, social change and current social trends; the sociocultural diversity of groups; the infrastructure and interrelationships of social organizations; and alternative theoretical perspectives for explaining these social phenomenon.

SOC-225 Social Problems (3 cr.)
SBSCI/SOC, ESC, GLP
Sociological analysis of current social problems in the U.S.
and the world.

SOC-250 Social Psychology (3 cr.)
Spring
Theory and application of social interaction; emphasis on communication.

SOC-275 Sociology of Gender Roles (3 cr.)
ESB
Fall and Spring
Sociological analysis of social roles played by the sexes.

SOC-300 Sociology of Technology (3 cr.)
TECH
Fall, Spring and Summer
Sociological influences on the structure, function, dissemination, consumption and consequences of science and technology; analysis of science and technology myths, misuses and abuses; prspectives on future trends in technology.

SOC-315 Criminology (3 cr.)
Fall and Spring
Sociological analysis of structure and function of criminal law, variables of criminal behavior and operation of criminal justice system.
Prerequisites: take SOC-110.

SOC-325 Sociology of Leisure (3 cr.)
Fall and Spring
Institutional approach to effects of leisure on social structure; values reflected in leisure; problems with increase in leisure resources.

SOC-340 Sociology of Work (3 cr.)
ESC
Fall and Spring
Human behavior in various types of employment and occupations; trends in U.S. occupational structure.

SOC-350 Sociology of Hmong Culture (1 cr.)
ESA

Sociological overview of Hmong cultural values, history, immigration and resettlement experiences, family and clan functions, and spiritual beliefs and practices. **$**

SOC-360 Sociology of Juvenile Delinquency (3 cr.)
Fall and Spring
Theories of delinquency, criminal behavior, and social control in relation to modern institutions in American culture. Prerequisites: take SOC-110.

SOC-375 Sociology of Minority Groups (3 cr.)
ESA, GLP
Fall and Spring
Social/psychological aspects of interaction between majority and minority groups; trends among minorities in the United States.

SOC-400 Sociology of Altruism (3 cr.)
Fall
Sociological perspective of altruism explored in the context of volunteer public service, and biographies of exemplary public service participants. Acceptance Into Honors Program.

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SOCWK Social Work

SOCWK-205 Introduction to Social Work 3 cr.
Fall and Spring Semesters
Social work as a profession; history and philosophy of social services; information for teachers, counselors and those interested in the field. Equivalent to 387-205. P: SOC-110.

SOCWK-420 Child and Family Agencies 3 cr.
Fall and Spring Semesters
Social and legal status of children in American society; various social services designed to optimize child's growth and development; nature and needs of families; family service agencies. Equivalent to 387-420. P: SOC-110.

SOCWK-430 Social Casework Methods 3 cr.
Dynamics of social casework: mobilizing individual capacities and community resources to promote adjustment between client and environment; social change. Equivalent to 387-430. P: SOC-110.

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SPAN Spanish

SPAN-103 Elementary Spanish I (4 cr.)
COMSK LANG ESB FGLP Fall and Spring
Understanding, speaking, reading and writing in Spanish. Culture of Spanish-speaking peoples, including those in the United States.Grammatical gender, present and past tense verbs, pronouns, adjectives. Supplementary work with audiotapes and computers. Not available for credit to students who took SPAN-121 or SPAN-122. Only one Spanish course counts toward Ethnic Studies.

SPAN-104 Elementary Spanish II (4 cr.)
COMSK LANG ESB FGLP Spring
Second level of understanding, speaking, reading and writing in Spanish. Topics in the culture of Spanish-speaking people, including those in the United States. Compound verb tenses, the subjunctive and commands. Supplementary work with audiotapes and computers. One year of high school Spanish or SPAN-103 required or SPAN-122.

SPAN-121 Practical Spanish I (2 cr.)
ESB FGLP Fall, Spring and Summer
Pronunciation, basic phrases for everyday situations, comprehension and production of short written and spoken sentences, basic grammar summary, introductory vocabulary, language in Hispanic and Hispanic-American cultural context. Not available for credit to students who took SPAN-103. Only one Spanish course counts toward Ethnic Studies.

SPAN-122 Practical Spanish II (2 cr.)
COMSK LANG ESB FGLP Fall, Spring and Summer
Second quarter college Spanish. Vocabulary, conversational patterns, irregular present tense verbs, regular and some irregular preterite verbs; object pronouns. Spanish language in the context of Hispanic culture. Not available for credit to students who took SPAN-103. Only one Spanish course counts for Ethnic Studies. One semester of high school Spanish or SPAN-121 required.

SPAN-201 Intermediate Spanish I (4 cr.)
HUM FLC ESB FGLP Fall, Spring and Summer
Extensive development of vocabulary including common idioms, aural comprehension, correct pronunciation and recognition of verb tenses. Readings and class discussion based on historical background and contemporary Hispanic life, including Hispanic culture in the United States. Only one Spanish course counts for Ethnic Studies. Two years of high school Spanish or SPAN-104 required.

SPAN-202 Intermediate Spanish II (4 cr.)
COMSK LANG FGLP Fall, Spring and Summer
Complete grammar review of standard Spanish, applicable to both conversational situations and business or personal correspondence. Review of essential vocabulary and phrases. Accuracy and fluency in spontaneous conversation and free composition. SPAN-104 or three years of high school Spanish .

SPAN-227 Spanish Composition and Conversation I (2 cr.)
COMSK LANG ESB FGLP Fall
Fifth semester college Spanish. Advanced grammar review. Introduction to composition. Writing paragraphs and short essays. Advanced conversation. Emphasis on native-like pronunciation, vocabulary and structural fluency. Only one Spanish course counts as Ethnic Studies. Four years of high school Spanish or SPAN-202 required.

SPAN-229 Hispanic Literature in America (2 cr.)
HUM FLC ESB FGLP Fall and Spring
Sixth semester college Spanish. Themes and techniques of Hispanic literature. Vocabulary in Spanish for discussion of a variety of literary genres. Historical and cultural contexts. Emphasis on increasing oral and written fluency in Spanish. Four years of high school Spanish or SPAN-202 required. **R**

SPAN-304 Latin American Short Story (2 cr.)
HUM FLC FGLP Fall
Introduction to the 20th and 21st century Latin American short story. Vocabulary and readings in Spanish of prominent authors and distinct literary periods of this genre. Related historical and cultural contexts. Taught in Spanish. SPAN-202 or equivalent.

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SPCOM Speech Communication

SPCOM-100 Fundamentals of Speech (2 cr.)
COMSK Fall, Spring and Summer
Techniques of effective speech: diagnosis of individual needs and training in necessary skills; speaker/listener relations, speech organization, voice, bodily action, language and development of confidence and poise.

SPCOM-101 Forensics (1-2 cr.)
Fall and Spring
Training in speech through instruction in and application of the principles used in intercollegiate forensics program: oral interpretation and original and limited- preparation events. **R**

SPCOM-102 Forensics (1-2 cr.)
Fall and Spring
Training in speech through instruction in an application of the principles used in intercollegiate forensics program: oral interpretation and original and limited- preparation events.
Prerequisites: take SPCOM-101. **R**

SPCOM-103 Forensics (1-2 cr.)
Fall and Spring
Training in speech through instruction in an application of the principles used in intercollegiate forensics program: oral interpretation and original and limited- preparation events.
Prerequisites: take SPCOM-102. **R**

SPCOM-104 Forensics (1-2 cr.)
Fall and Spring
Training in speech through instruction in and application of the principles used in intercollegiate forensics program; specific emphasis on forensics administration.
Prerequisites: take SPCOM-103. **R**

SPCOM-200 Persuasive Speaking (2 cr.)
COMSK Fall, Spring and Summer
Advanced techniques of speaking; develop skill in audience analysis, speech composition and delivery of various types of speeches; recognize techniques used daily toward individuals and groups.
Prerequisites: take SPCOM-100.

SPCOM-202 Oral Interpretation (2 cr.)
HUM CRPRF Spring
Individual and group activities to develop skill in the oral performance of literature; projects in analysis and delivery of literature. Consideration of individual problems.

SPCOM-206 Discussion (2 cr.)
COMSK Fall and Spring
Principles and techniques of discussion; leading and participating in symposium, panel, roundtable and other discussion forms.

SPCOM-208 Theory of Communication (3 cr.)
COMSK Fall and Spring
How people communicate with each other; interpersonal, social, technical and business communication, monographs of various communication theorists.
Prerequisites: take SPCOM-100.

SPCOM-210 Interpersonal Speech Communication (2 cr.)
COMSK Fall and Spring
Basic aspects of non-structured, informal speech communication; expression of feelings and intentions and processing of relationships.

SPCOM-236 Listening (2 cr.)
COMSK
Theoretical analysis and practical application of listening concepts. Emphasis on assessment of individual listening skills and methods of improving personal listening techniques used in occupational and personal relationships.

SPCOM-308 Speech Skills For Business and Industry (2 cr.)
Fall, Spring and Summer
Technical speaking; projects in application of speech skills and activities in business and industry.

SPCOM-310 Introduction To Communication Disorders (3 cr.)
Fall
Nature, causes of and methods used when working with individuals who have speech and language disorders.

SPCOM-310 Introduction To Speech Correction (2 cr.)
Spring
Nature and causes of and therapeutic methods for remediating speech and language disorders.

SPCOM-312 Intercultural Communication (2 cr.)
ESB, GLP Fall and Spring

Communication concepts and strategies in a multi- cultural society with emphasis on the major United States cultural groups: understanding communication norms in one's culture of origin and developing a functional appreciation of the diversity of communication standards among cultures. Prerequisites: take SPCOM-100.

SPCOM-414 Interviewing (1 cr.)
Fall and Spring
Principles and techniques for interviewee in employment interviews.

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SPED Special Education

SPED-300 Introduction To Individuals With Cognitive Disabilities 3 cr.
Fall
Introduction to etiology of mental retardation; psychological, educational, social and vocational aspects; adjustment techniques used in working with mentally retarded persons. Equivalent to 431-585, 431-500.

SPED-301 Learning Disabilities 3 cr.
Spring
Identification, remediation and evaluation of learning disabled; intervention techniques used with adolescents and adults. Equivalent to 431-501.

SPED-305 Introduction to Early Childhood Special Education 2 cr.
Summer
Introduction to the history and purposes of EC-SE programming, legislation, population receiving services, family intervention, intervention models and issues. Prerequisites: take SPED-430 and HDFL-124.

SPED-310 Methods, Materials and Curriculum for the Exceptional Child 3 cr.
Fall
Curricular and methodological adaptation for young children with exceptional educational needs in the areas of social-emotional development, manipulative and motor skills, self-help skills, communication, cognitive development, and creative expression. Admission to Early Childhood Special Education Certification track. Prerequisites: take HDFL-410, HDFL-411, HDFL-412, HDFL-413 and SPED-305.

SPED-315 Early Childhood Special Education Programming 3 cr.
Spring
Organization and implementation of Early Childhood Special Education programs, including service delivery, program models, consultation and collaboration, and intervention agents. Prerequisites: take SPED-305 SPED-310.

SPED-318 Introduction to Teaching and Assessment in Special Education 2 cr.
Fall, Spring and Summer
Provides one-on-one, supervised experience in teaching youth with exceptional education need (EEN). Provides the initial opportunity for the student to teach a young person with EEN in a supervised setting for 50 hours. Equivalent to 431-518, 431-562.

SPED-320 Early Childhood Exceptional Educational Needs Assessment 2 cr.
Summer
Assessment and diagnosis of the young child with a suspected disability. Norm referenced, criterion referenced, and play-based assessment in the following areas: cognitive, motor, speech/language social/emotional, and family. Admission to Early Childhood Special Education Certification track. Prerequisites: take SPED-315.

SPED-322 Curriculum and Instruction: Functional Living Skills 2 cr.
Spring
Curriculum and instructional techniques for developing basic functional living skills for persons with cognitive disabilities, borderline and severe. Equivalent to 431-522. Prerequisites: take SPED-300 and SPED-430.

SPED-323 Curriculum and Instruction: Academic Skills 3 cr.
Fall and Spring

Curriculum and instructional techniques for developing academic skills for persons with cognitive disabilities (borderline and severe). Equivalent to 431-523. Prerequisites: take SPED-300 and SPED-430.

SPED-324 Curriculum and Instruction: Career and Transition Education 3 cr.
Fall
Curriculum and instruction for persons with cognitive disabilities, borderline and severe, in prevocational career, vocational education, and transition stressing interdisciplinary cooperation. Equivalent to 431-524. Prerequisites: take SPED-300 and SPED-430.

SPED-326 Practicum in Special Education 2 cr.
Fall
Off-campus work and study in educational settings with youth with cognitive disabilities borderline (CDB) and/or cognitive disabilities severe (CDS) for a minimum of 50 hours in a supervised setting, utilizing the teaching techniques and methods previously learned. Equivalent to 431-526. Prerequisites: take SPED-318.

SPED-328 Assessment for Individual Education/ Transition Plans 3 cr.
ESC Fall, Spring and Summer
Diagnosing behavior and learning problems of students with exceptional education needs. Preparing individual educational and transitional plans based on comprehensive assessments. Equivalent to 431-528. Prerequisites: take REHAB-420.

SPED-400 Workshop: Topics in Special Education 1-3 cr.
Summer
Current specialized topics studied through experiential activities. Equivalent to 431-600.

SPED-430 Inclusion of Students With Exceptional Needs 3 cr.
Fall, Spring and Summer
Inclusion of students with exceptional educational needs in the regular classroom setting. Laws, definition, characteristics, adaptations, strategies and transitional services that pertain to persons identified with: cognitive disability, learning disability, attention deficit hyperactivity disorder, emotional disability, autism, traumatic brain injury, speech and language disorders, visual and hearing loss, physical and other health impairments, and gifted and talented. Minimum cumulative GPA 2.75. Education majors must have passed PPST. Equivalent to 431-630.

SPED-462 Classroom Management Techniques 3 cr.
Spring
Techniques for motivating handicapped youth, individual and group discipline, behavior modification, educational organization, evaluation, and communication to enhance learning. Equivalent to 431-662.

SPED-480 Student Teaching With Handicapped Youth 4-8 cr.
Fall and Spring
Directed teaching and community experiences in selected off-campus schools with normal and handicapped adolescents. Satisf Health, Speech, English. Equivalent to 431-480. Prerequisites: take SPED-462.

SPED-481 Student Teaching Youth With Cognitive Disabilities 16 cr.
Fall and Spring
Directed teaching and community experiences in selected off-campus schools with cognitive disabilities for a full school semester. Office of Teacher Education permission required. Equivalent to SPED-480, 431-480 and 431-481. Prerequisites: take SPED-318 SPED-326 SPED-462.

SPED-482 Student Teaching Early Childhood -- Special Education 6 cr.
Directed teaching and community experiences in selected infant-toddler, preschool, or school based programs for children with disabilities. Admission to Early Childhood Special Education Certification track. Prerequisites: take SPED-320 and SPED-430.

SPED-488 Intern Teaching: Special Education 16 cr.
An alternative method of obtaining Special Education student teaching experience. Interns receive license to teach and salaried appointment in a cooperating school for one semester. Office of Teacher Education permission required. Prerequisites: take SPED-322, SPED-323, SPED-324, SPED-326 and SPED-462.

SRVM Service Management

SRVM-111 Introduction To Global Service (3 cr.)
GLP
Principles of service management with emphasis on trends, career opportunities, and global economic impact of service sectors.

SRVM-210 Service Operations Management (3 cr.)
Examination of the environment in which services operate. The design of service delivery systems is addressed from the perspective of both customer participation and operations efficiency.

SRVM-260 Managing Service Learning (3 cr.)
Fall and Spring
Manage service-learning systems that respond to community needs. Address the perspectives of not-for-profit and for-profit delivery systems.

SRVM-346 Seminar in Service Management (1 cr.)
Definition and analysis of high performance service management best practices.

SRVM-354 Service Marketing Management (3 cr.)
Marketing management concepts, issues and terminology unique to the service sector. Strategies used by service marketers will be analyzed and contrasted with other economic sectors. Prerequisites: take HT-251 or BUMKG-330.

SRVM-398 Service Management Field Experience (1-2 cr.)
Off-campus work and study in an approved position to better understand the challenges and potentials of various careers in the hospitality area.

SRVM-420 International Service Concepts (3 cr.)
GLP Fall and Spring
National and cultural constraints and expectations that impact planning, execution, and evaluation of service quality. Cultural, business, managerial and behavioral foundations supporting success in an international service context. Prerequisites: take SRVM-111.

SRVM-421 Customer Interaction Center Management (3 cr.)
Spring
Introduction to evaluation, design, maintenance, and management of online telephone technology to provide customer service solutions for industry in customer interaction centers.

SRVM-481 Special Problems in Service Management(1-3 cr.) **R**

SRVM-498 Service Management Field Experience (1-2 cr.)
Fall, Spring and Summer
Off-campus work and study in an approved position to better understand the challenges and potentials of various careers in the hospitality area. Must Have 90 Credits Completed.

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STAT Statistics

STAT-130 Elementary Statistics 2 cr.
ANRSN STAT Fall, Spring and Summer
Concepts and application of probability and statistics: data analysis (graphical displays, numerical summary measures); probability and probability distributions; concepts of statistical inference (estimation and hypothesis testing). Illustrated with output from statistical computing packages. Equivalent to 354-130.

STAT-320 Statistical Methods 3 cr.
ANRSN STAT Fall, Spring and Summer
Histograms, mean and standard deviation, combinatorics, probability; binomial, hypergeometric, normal, Chi-square, T and F distributions and their uses; statistical inference; contingency tables, linear models, analysis of variance with appropriate applications.Three years of high school math required, or Math-120 or higher. Equivalent to 354-530. P: 1 courses from subject MATH, from Level 2 except MATH-110 or MATH-118.

STAT-330 Probability and Statistics for Engineering and the Sciences 3 cr.
Fall and Spring Semesters
Exploratory data analysis; basic probability, probability distributions, mathematical expectation, sampling distributions; basic statistical inference (estimation and hypothesis testing); topics in reliability. Equivalent to 354-330. P: MATH-154 or MATH-157.

STAT-331 Probability and Mathematical Statistics I 3 cr.
Fall Semester
Sample spaces. Probability functions for discrete and continuous sample spaces. Conditional probability and independence. Random variables; probability density and cumulative distribution functions; joint, marginal, and conditional distributions. Expected values, moments, and moment-generating functions. Binomial, hypergeometric, Poisson, normal, and gamma distributions. Equivalent to 354-331. P: MATH-154 or MATH-157. Corequisite: Math-158.

STAT-332 Probability and Mathematical Statistics II 3 cr.
Spring Semester
Sampling distributions, order statistics, introduction to decision theory, estimation, hypothesis testing, nonparametric methods, regression and correlation, analysis of variance. Equivalent to 354-332. P: STAT-331.

STAT-337 Design of Experiments I 2 cr.
Fall Semester
Linear and curvilinear regression, single-factor designs, confidence ellipsoids for means, blocking, Latin and other squares, factorial designs. Equivalent to 354-531. P: STAT-332.

STAT-338 Design of Experiments II 2 cr.
Spring Semester
Fixed-effect, random-effect and mixed models; nested and nested-factorial designs, split-plot designs, confounding in blocks, analysis of convariance, response surfaces, sequential analysis. Equivalent to 354-532. P: STAT-337.

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TCS Telecommunication Systems

TCS-103 Communication and Information Technology (3 cr.)
TECH
Fall, Spring and Summer
Movement of information via modern networks with an emphasis on a fundamental set of communication technology concepts. Introduction to technology, common information technology systems, impact, regulations and future of telecommunication technology. Digital communication technologies for personal, educational and professional growth.

TCS-131 Networking Operating System Fundamentals (2 cr.)
Fall and Spring
Introduction to network operating systems as utilized in the telecommunications industry. Installation and configuration of basic desktop operating systems.

TCS-141 Networking Fundamentals I (2 cr.)
Fall and Spring
Introduction to computer networks with emphasis on the basic OSI 7-layer Model, media infrastructure and hardware interface. First in a four-course sequence to prepare students for the
Cisco Certified Network Associate (CCNA) examination.

TCS-142 Networking Fundamentals II (2 cr.)
Fall and Spring
Introduction to router installation and configuration. Second in a four-course sequence to prepare students for the Cisco Certified Network Associate (CCNA) examination.
Prerequisites: take TCS-131, TCS-141.

TCS-143 Networking Fundamentals III (2 cr.)
Fall and Spring
Introduction to Layer-2 switching, IPX, VLANs, Access control Lists, and IGRP. Third in a four- course sequence to prepare students for the Cisco Certified Network Associate (CCNA) examination.
Prerequisites: take TCS-142.

TCS-144 Networking Fundamentals IV (2 cr.)
Fall and Spring
Introduction to WAN services including PPP, ISDN, Frame Relay. Fourth in a four-course sequence to prepare student for the Cisco Certified Network Associate (CCNA) examination.

TCS-300 Workshop (1-3 cr.)
Fall, Spring and Summer
Special topics in graphic communications, providing hands on or experiential learning activities. Specific content and title to reflect the topic of the workshop. **R**

TCS-304 Communications and Information Systems (1-3 cr.)
Fall, Spring and Summer
Overview of the communications industry. Use of systems to create, process, transmit, receive and evaluate information.
Prerequisites: take TCS-103.

TCS-305 Office Automation Technology (3 cr.)
Fall, Spring and Summer
Automation information concepts and technology used in office including both communication, storage, and retrieval systems. Emphasis on cost effective selection and implementation problems.

TCS-306 Introduction To Telephony (2 cr.)
Fall, Spring and Summer
Principles of current technologies, systems, and trends in telephone communication systems design and applications.

TCS-340 Cisco Networking Academy Program: Instructor Fast Track (2 cr.)
Summer
Fast-track option to prepare the instructor for teaching in the Cisco Networking Academic Program, meeting requirements for the Cisco Certified Academic Instructor (CCAI). Instructor's consent required. Must be Cisco CCNA certified.

TCS-341 Cisco Networking Academy Program: Instructor I (4 cr.)
First in a four-course sequence preparing instructors for teaching in the Cisco Networking Academy Program, meeting requirements for the Cisco Certified Academic Instructor (CCAI), and preparing for the Cisco Certified Network Associate (CCNA) examination. Instructor's consent required.

TCS-342 Cisco Networking Academy Program: Instructor II (3 cr.)
Second in a four-course sequence preparing instructors for teaching in the Cisco Networking Academy Program, meeting requirements for the Cisco Certified Academic Instructor (CCAI), and preparing for the Cisco Certified Network Associate (CCNA) examination.
Prerequisites: take TCS-341.

TCS-343 Cisco Networking Academy Program: Instructor III (2 cr.)
Third in a four-course sequence preparing instructors for teaching in the Cisco Networking Academy Program, meeting requirements for the Cisco Certified Academic Instructor (CCAI), and preparing for the Cisco Certified Network Associate (CCNA) examination.
Prerequisites: take TCS-342.

TCS-344 Cisco Networking Academy Program: Instructor IV (2 cr.)
Fourth in a four-course sequence preparing instructors for teaching in the Cisco Networking Academy Program, meeting requirements for the Cisco Certified Academic Instructor (CCAI), and preparing for the Cisco Certified Network Associate (CCNA) examination.
Prerequisites: take TCS-343.

TCS-382 Network Systems Design (3 cr.)
Spring
Concepts from communication networks. LAN, MAN, WAN networks. Introduction to LAN switching, ATM and virtual LANS. Designing and integration of LAN switching virtual networking and ATM into today's networks. Telecommunication Systems majors only.

TCS-383 Introduction To Network Security (3 cr.)
Winterm, Summer
Design, implementation and management of network security in multilayered computer networks. Identifying and evaluating network security threats; internet, intranet, and extranet security issues. Must be Cisco CCNA certified.

TCS-401 Telecommunications Policy and Regulations (3 cr.)
GLP
Fall and Spring
Telecommunications policy and regulatory issues, standards and policy setting agencies for national and international markets. Junior level or higher.

TCS-441 Scalable Internetworks (3 cr.)
One of three core courses for preparation for the Cisco CCNP and CCDP professional certification. Students will learn how to build scalable routable networks. Students are required to pass the associated Cisco certification examination. Must be Cisco CCNA certified.

TCS-442 Remote Access Networks (3 cr.)
Fall and Spring
One of three core courses for preparation for the Cisco CCNP and CCDP professional certification. Students will learn how to build remote access networks to interconnect central sites to branch offices and home offices. Students are required to pass the associated Cisco certification examination.
Prerequisites: take TCS-441.

TCS-443 Multi-Layer Switched Networks (3 cr.)
Fall and Spring
One of three core courses for preparation for the Cisco CCNP and CCDP professional certification. Build multi-layer switched networks. Students are required to pass the associated Cisco certification examination.
Prerequisites: take TCS-441.

TCS-444 Internetwork Troubleshooting (3 cr.)
Fall and Spring
Specialization course for the Cisco CCNP professional certification. Students will learn to troubleshoot internetworks. Students are required to pass the associated Cisco certification examination.
Prerequisites: take TCS-441, TCS-442, TCS-443.

TCS-445 Internetwork Design (3 cr.)
Fall and Spring
Specialization course for the Cisco CCNP professional certification. Students will learn to design internetwork solutions. Students are required to pass the associated Cisco certification examination.
Prerequisites: take TCS-441, TCS-442, TCS-443.

TCS-481 Telecommunications Systems Administration (3 cr.)
Fall
Issues and concerns required to manage telecommunications networks and contemporary problems.

TCS-491 Wireless Systems (3 cr.)
Spring
Power measurements; description of waves; impedance calculations using the Smith Chart; types of amplifiers and microwave devices; antenna theory; microwave and wireless communications.
Prerequisites: take MATH-153, PHYS-231, PHYS-232.

TECED Technology Education

TECED-160 Introduction to Technology Education 1 cr.
Fall and Spring Semesters
Survey of the history, philosophy, mission, curriculum, methods, organizations and resources associated with technology education. Equivalent to 190-160.

TECED-205 Teaching Methods Technology/Vocational Education 2 cr.
Fall, Spring and Summer
Study of teaching methods in use in youth and adult shop classes. Instruction planning; lesson presentation with video tape equipment; methods of organization and management; instruction aids; professional ethics. Equivalent to 190-205, 190-205. P: TECED-160.

TECED-260 Curriculum, Methods, and Assessment For Technology Education 3 cr.
Fall Semester
Development of rationales, goals, content outlines, outcomes, objectives, activities, and assessment items. Equivalent to 190-260. P: TECED-160, EDUC-312.

TECED-325 Technology for Elementary School Children 2 cr.
Fall, Spring and Summer
Development, philosophy, objectives and course organization for industrial arts for the elementary schools. Suitable laboratory work in woods, metals, plastics and drawing. Equivalent to 190-525.

TECED-330 Implementing Technology Education 3 cr.
Fall, Spring and Summer
Converts the theory of contemporary technology education programs into instructional materials, facilities, and strategy suited to the secondary and post-secondary school. Equivalent to 190-530.

TECED-333 Planning Technical/Vocational Laboratories 2 cr.
School shop facility planning: equipment selection, placement, care and management. Equivalent to 190-533. P: TECED-405.

TECED-340 Middle School Technology Education 2 cr.
Fall, Spring and Summer
Reviews trends and activities in the technology education movement. To update instructors to teach middle school offerings. Equivalent to 190-540.

TECED-360 Technology Education Pre-Clinical Experience 1 cr.
Fall and Spring Semesters
Observing, experiencing, evaluating, and analyzing teaching and learning in public school settings. Equivalent to 190-360. P: TECED-160.

TECED-375 Workshop 1-3 cr.
Current specialized topics in industrial education through experiential activities. Instructor's consent required. Equivalent to 190-575.

TECED-390 Lab/Class Management in Technology Education 2 cr.
Fall, Spring and Summer
An overview of principles of facility planning and equipment selection for a variety of curriculum needs. Laboratory and classroom management techniques will be presented with an emphasis on safety requirements and managing various delivery systems used in contemporary programs. Equivalent to 190-390. P: TECED-160.

TECED-398 Field Experience 1-2 cr.
Fall, Spring and Summer Equivalent to 190-398.

TECED-398E Field Experience 1 cr.
Fall, Spring and Summer Equivalent to 190-398E.

TECED-403 Activities in Technology/Vocational Education 2 cr.
A study and design of learning activities for industrial and vocational education. Learning activities will be developed on selected levels of the cognitive, psychomotor, and affective domains to carry out stated behavioral objectives. An

evaluation of the appropriateness of learning activities as presented in contemporary curriculum projects. Equivalent to 190-606.

TECED-405 Curriculum Technology/Vocational Education 2 cr**.**
Fall, Spring and Summer
Study of curriculum terminology and methods of selecting and organizing content for industrial education courses. A course of study and individualized instruction will be developed by the student for use in teaching a class in industrial arts or vocational education. Equivalent to 190-405. P: TECED-160, TECED-205.

TECED-406 Evaluation in Technology/Vocational Education 2 cr.
Fall, Spring and Summer
For industrial arts and vocational/technical teachers in evaluating program and student performance: basis for student assessment, evaluation of manipulative activity and construction of teacher-made tests as applied to all students (including those with special needs). Student evaluation of instructor and instruction. Equivalent to 190-406. P: TECED-205.

TECED-407 Student Teaching in Technology Education 5 cr.
Directed teaching and community experiences in selected off-campus schools. Teaching Certificate Required. Equivalent to 190-407.

TECED-408 Student Teaching Technology/Vocational Education 8 cr.
Fall and Spring Semesters
Directed teaching and community experiences in selected off-campus schools. Satisfactory health, speech and English. Cumulative GPA of 2.25 or better. Equivalent to 190-408.

TECED-409 Student Teaching 16 cr.
Fall, Spring and Summer
Directed teaching and community experiences in selected off-campus schools. OTE permission required. Satisfactory health, speech and English. Equivalent to 190-409. P: TECED-160, TECED-205, TECED-405, TECED-406.

TECED-431 Field Trips to Industry 1-3 cr.
Opportunities are provided for industrial and vocational education majors as well as teachers to accumulate information about industries through local and distant on-site visits to industries. A third credit may be earned by showing evidence of application of data collected in courses being taught. Equivalent to 190-631. **R$**

TECED-437 Organization/Management of Technical Laboratories 2 cr.
Summer Session
Experience in administration, project development and teaching problems associated with industrial education. Equivalent to 190-637. P: TECED-205.

TECED-438 Course Construction 2 cr.
Spring Semester and Summer Session
Directed experience in curriculum development and course of study construction for industrial education teachers; development of behavioral objectives and of instructional materials to help reach these objectives; development of course of study, instructional package/unit of instruction. Equivalent to 190-638.

TECED-460 Advanced Curriculum, Methods and Assessment for Technology 3 cr.
Spring Semester
Development and implementation of lessons, demonstrations, lab activities, evaluations, and classroom management plans. Equivalent to 190-460. P: TECED-260.

TECED-488 Internship Teaching 2-8 cr.
Fall and Spring Semesters
An alternate method of obtaining student teaching experience. Teacher interns receive a license to teach and salaried appointments in cooperating school systems for one full semester. Equivalent to 190-488.

TECED-489 Internship Teaching 16 cr.
Fall and Spring Semesters
An alternate method of obtaining student teaching experience. Teacher interns receive a license to teach and salaried appointments in cooperating school systems for one full semester. Admission to student teaching. Equivalent to 190-489. **R**

TECED-498 Field Experience 1-2 cr.
Fall, Spring and Summer Equivalent to 190-498.

TECED-498E Field Experience 1 cr.
Fall, Spring and Summer
Equivalent to 190-498E.

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TECH Technology

TECH-230 Exploring Technology 2 cr.
TECH Fall, Spring and Summer
Aspects of technology: definitions, present characteristics, history, forecasting, transfer, assessment, impact and systems. Equivalent to 195-530, 195-230.

TECH-320 Technological Advances—Fast Forward I 2 cr.
TECH Fall Semester and Summer Session
Outlines industry's rapid advancements in high technology as utilized in the world today. Reference is made to a variety of applications of this technology now and in the future. Equivalent to 195-520.

TECH-332 Futures of Technology 2 cr.
TECH Fall Semester
Concepts of future studies as applied to technology. Exploration of possible alternatives. Techniques and skills for the professional user and the citizen consumer. Equivalent to 195-532.

TECH-340 Future of Work 1-2 cr.
Future possibilities as to why people work, who will work, and in what conditions. Project probable work parameters from current tends. Relate past, present, and future to students' individual work situations. Equivalent to 195-540.

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THEA Theatre

THEA-131 Theater Practicum .5-1 cr.
HUM CRPRF Fall and Spring Semesters
Participation in acting, stagecraft, lights, sound, makeup, costumes, properties and business in university theater productions. Equivalent to 391-131. **R**

THEA-232 Introduction to the Theater 3 cr.
HUM CRPRF Fall and Spring Semesters
Development of theater arts from ancient times to present; play styles, production methods and audience appreciation; representative plays. Equivalent to 391-232.

THEA-334 Contemporary Theater 2 cr.
HUM CRPRF Spring Semester Analysis of selected plays; structure, dramatic content and production methods. Equivalent to 391-334.

THEA-336 Stagecraft and Scene Design 2 cr.
HUM CRPRF Spring Semester
Technical problems in producing plays; set design; constructing, painting and handling scenery; stage lighting, makeup, costuming, sound and visual effects, organization of production staff. Equivalent to 391-336. P: THEA-232.

THEA-338 Play Production 2 cr.
HUM CRPRF Fall Semester
Directing and acting techniques in play production; selecting, rehearsing and producing scenes for class. Equivalent to 391-338.

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TRANS Transportation/Energy

TRANS-202 Transportation Systems 2 cr.
TECH Fall and Spring Semesters
Effects of transportation on society. Comparisons of transportation modes on relative costs, speeds, reliability, efficiency, and more. Examination of vehicle structures, propulsion, suspension, guidance, control and support systems. Equivalent to 186-202.

TRANS-203 Transportation Systems Lab 1 cr.
Fall and Spring Semesters
Applications and reinforcement of transportation modes. Special projects and field trips. Equivalent to 186-203.

TRANS-204 Energy Technology 2 cr.
TECH Fall and Spring Semesters
The nature of energy, its discovery, conversion, and harnessing. Economic, environmental, political and social ramifications of energy-related choices. Equivalent to 110-504, 186-504, 186-204.

TRANS-205 Energy Technology Lab 1 cr.
Fall and Spring Semesters
Mechanical, electrical, fluid and thermal power projects. Equivalent to 110-504, 186-504, 186-205. P: TRANS-204.

TRANS-357 Principles of Technology I 3 cr.
Fall, Spring and Summer
Contemporary applications of the principles governing force, work, rate, resistance, energy, power, and force transformers in mechanical, electrical, fluid and thermal systems. Technical content especially appropriate for educational applications. Equivalent to 110-557, 186-557.

TRANS-395 Seminar 1-2 cr.
Fall, Spring and Summer
Specific content is designed to upgrade competencies of participants. Content will change to reflect current state of the art in electricity/electronics or power mechanics. Equivalent to 186-595. **R**

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TRDIS Transdisciplinary

TRDIS-100 Applied Student Leadership 2 cr.
Fall and Spring Semesters
Applied leadership techniques in interpersonal communications and organizational dynamics developed through classroom experience and practice. Equivalent to 500-100.

TRDIS-101 Seminar in Career Exploration 1 cr.
Fall and Spring Semesters
Identification and analysis of individual career interests, values, needs, skills, and goals. Investigation of resources for

career planning and development, including educational programs, job market information and employment opportunities. Development of individual career plans. Equivalent to TRDIS-196, 500-196.

TRDIS-120 Strategies for Academic Success 2 cr.
Develop study skills strategies, note taking and test-taking techniques, time management, goal setting, and textbook reading comprehension. Application of principles leads to academic success at the university. Equivalent to EDUC-280, 421-280.

TRDIS-297 Wisconsin in Scotland Field Experience 3 cr.
Fall and Spring Semesters
International field experience as unpaid volunteer in a business, educational, social service, or other non-profit organization in Scotland. Must be enrolled in Wisconsin in Scotland study abroad program. Equivalent to 500-297.

TRDIS-477 International Study 1-16 cr.
Inter-institutional credit exchange for students accepted in university-approved study abroad or international exchange programs offered through the office of international programs at recognized/accredited institutions in other countries. The course may be repeated. Equivalent to 500-477. **R**

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TRHRD Training and Human Resource Development

TRHRD-360 Training Systems in Business and Industry 3 cr.
Summer Session
Types and purpose of training as related to business and industry. Training analysis, content, delivery systems, evaluation and justification for training. Designed for non-education majors. Equivalent to 198-560.

TRHRD-370 Training Methods in Business and Industry 2 cr.
Fall, Spring and Summer
Identification of training situations where the development and delivery of training is needed. Emphasis is on methods to deliver a training session. Students will be required to make training sessions presentations. Equivalent to 198-570.

TRHRD-375 Workshop 1-3 cr.
Fall, Spring and Summer
Special topics providing hands-on or experiential learning activities. Specific content and title to reflect the topic of the workshop. Equivalent to 198-575. **R**

TRHRD-389 Training Internship 2-8 cr.
Fall and Spring Semesters
Opportunities for students to learn and practice training management and instructional techniques through activities and experiences in a training department. Objectives commensurate with student's background and field of training. Activities include designing and implementing training programs in student's major or minor field of study in either industry, business, military or government training programs. Equivalent to 198-589. P: TRHRD-360. **R**

TRHRD-400 Workshop 1-3 cr.
Fall, Spring and Summer
Special topics in training and human resource development providing hands-on or experiential learning activities. Specific content and title to reflect topic of the workshop. Equivalent to 198-600. **R**

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WS Women's Studies

WS-210 Introduction to Women's Studies 2 cr.
INTER ESB Fall and Spring Semesters
An examination of the experience of women in American society, their past and present contributions and roles, and perspectives on the future. Equivalent to 300-510, 300-210.

WS-310 Women's Studies Practicum 1-3 cr.
Application of women's and gender studies principles to the development of leadership skills and service priorities in an organizational environment. P: WS-210.

WS-311 Topics in Women's Studies 1-3 cr.
Exploring, from interdisciplinary perspective, new information and ideas in a selected area of significance to women's studies. Equivalent to 300-511. P: WS-210. **R**

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